

PLAN OF OPERATIONS
CALPORTLAND COMPANY
LAPOZZ PROJECT
KERN COUNTY, CALIFORNIA

May 2010

Submitted to

Bureau of Land Management
Ridgecrest Field Office
300 S. Richmond Road
Ridgecrest, California 93555-4436

Submitted by

CalPortland Company
2025 East Financial Way
Glendora, California 91741-4692

**CALPORTLAND COMPANY
LAPOZZ PROJECT
PLAN OF OPERATIONS**

TABLE OF CONTENTS

1	INTRODUCTION	1
2	OPERATOR/CLAIM INFORMATION	2
3	DESCRIPTION OF PROJECT	3
3.1	<u>Project Location</u>	3
3.2	<u>Surface Ownership of the Land within the Area of Operation</u>	3
3.3	<u>Description of Area to be Disturbed</u>	3
3.4	<u>Description of Operations</u>	4
3.5	<u>Schedule of Operations</u>	5
3.6	<u>Existing Disturbance</u>	6
4	OPERATING PLANS	7
4.1	<u>Water Management Plan</u>	7
4.2	<u>Spill Contingency Plan</u>	7
4.3	<u>Access Route Maintenance Plan</u>	7
4.4	<u>Fire Management Plan</u>	7
4.5	<u>Solid and Hazardous Wastes Plan</u>	7
4.6	<u>Environmental Protection Measures</u>	8
5	RECLAMATION PLAN	13
5.1	<u>Schedule</u>	13
5.2	<u>Post Mining Land Use</u>	13
5.3	<u>Buildings, Structures, and Equipment Removal</u>	13
5.4	<u>Post Closure Management</u>	13
5.5	<u>Measures to be Taken During Extended Periods of Non-Operation</u>	14
6	MONITORING PLAN	15
6.1	<u>Compliance with the Approved Plan of Operations and Other Federal and State Environmental Laws and Regulations</u>	15
6.2	<u>Provide Early Detection of Potential Problems</u>	15
6.3	<u>Supply Information That Will Assist in Directing Corrective Actions Should They Become Necessary</u>	15
7	INTERIM MANAGEMENT PLAN	16
7.1	<u>Measures to Stabilize Excavations and Workings</u>	16
7.2	<u>Measures to Isolate or Control Toxic or Deleterious Materials</u>	16
7.3	<u>Measures to Maintain the Project Area in a Safe and Clean Condition</u>	16
7.4	<u>Schedule of Anticipated Periods of Temporary Closure</u>	16
7.5	<u>Temporary or Seasonal Closure</u>	16

8	STATEMENT OF ASSUMPTION OF RECLAMATION RESPONSIBILITY ...	17
9	RECLAMATION COST ESTIMATE	18
10	EFFECT OF PROPOSED RECLAMATION ON PUBLIC SAFETY	19
11	ACKNOWLEDGMENTS	20
12	REFERENCES	21

LIST OF TABLES

Table 1: Acreage of Approved and Proposed Project Disturbance

LIST OF APPENDICES

APPENDIX A: FIGURES

Figure 1: Site Location Map

Figure 2: Project Map

APPENDIX B: SPILL CONTINGENCY PLAN

APPENDIX C: RECLAMATION COST ESTIMATE

**CALPORTLAND COMPANY
LAPOZZ PROJECT
PLAN OF OPERATIONS**

1 INTRODUCTION

This Plan of Operations (Plan) is submitted to the Bureau of Land Management (BLM), Ridgecrest Field Office by CalPortland Company (CalPortland) for the LaPozz Project (Project). This Plan addresses CalPortland's proposed mining and excavation of natural pozzolan from a localized deposit in Kern County, California. The general location of the project is shown on Figure 1 (Appendix A). The material will be used to produce a pozzolan (blended) cement as part of CalPortland's strategy to reduce carbon dioxide (CO₂) emissions from its Mojave cement plant to meet the greenhouse gas emission reductions required by Assembly Bill (AB)-32, California's greenhouse gas reduction law. By itself, a pozzolan usually does not have cementitious properties; however, when substituted for a portion of the Portland cement in a blended cement, a pozzolan will react to produce a concrete exhibiting the strength and performance characteristics similar, if not identical, to a 100 percent Portland cement concrete mix. The CO₂ reduction results from replacing the Portland cement, which has associated CO₂ emissions of approximately 0.8 tons CO₂ per ton of cement in combustion and process emissions. The pozzolan will contribute zero CO₂ for process and combustion, but will have a small amount of CO₂ emissions associated with transportation. As an example, a 25 percent replacement in the Portland cement will result in a 25% reduction in CO₂ per ton of cement shipped from the facility. The pozzolan in this instance consists of opaline silica.

CalPortland has performed two phases of exploration activities in the form of bulk sampling at the Project Area under an exploration Plan of Operations CACA-48524 and determined that the pozzolan deposit meets certain criteria to warrant full development of the mining claims (LaPozz 2 through 6, CAMC286145 through CAMC286149, consecutively and LaPozz 7-located, claim number pending). It is estimated that an average of approximately 30,000 to 100,000 tons of material will be processed each year from the Project, over a maximum Project life span of 20 years, for a total maximum production of 420,000 tons of material. The pozzolan deposit is in the form of a flat lying bed, measuring nine to 12 feet thick, located on a hill top. A single bench will be mined from the hill top quarry. The material will be drilled and blasted and then crushed on site with a portable crusher. All of the crushed material will be stockpiled within the boundary of the operating area. The crushed material will be loaded and hauled to the Mojave cement plant as needed. Reclamation of the Project area will be conducted concurrently with the mining of the material in those areas where operations are completed and will consist of grading the surface of the bench to the original contour and scarifying the disturbed area to facilitate revegetation. Figure 2 illustrates the area of opaline silica caprock proposed to be mined and proposed Project design features.

This plan is submitted in accordance with the BLM Surface Management Regulations 43 Code of Federal Regulations (CFR) 3809, as amended. In addition to this Plan, a Surface Mining Permit and Reclamation Act (SMARA) Application is being submitted to the Kern County Planning Department because greater than one acre of surface disturbance is proposed.

2 OPERATOR/CLAIM INFORMATION

Name of Operator: CalPortland Company

Mailing Address: 2025 East Financial Way
Glendora, California 91741-4692

Telephone Number: (626) 852-6200

Tax Identification Number: 95-0597220

Company Contacts: Mr. Ed Harrison
Mr. Leo Mercy

Application Date: May 2010

Owner of Mining Claims: CalPortland Company

Claim Owner's Address: 2025 East Financial Way
Glendora, California 91471-4692
(626) 852-6200

Names of the Claims and BLM Serial Numbers Where Operations are to be Conducted:
LaPozz 2 through 6, CAMC286145 through CAMC286149, consecutively and LaPozz 7, located,
claim number pending.

3 DESCRIPTION OF PROJECT

3.1 Project Location

The Project is located in Kern County, approximately 10.5 miles south of the Freeman Junction and 17 miles southwest of the city of Inyokern, California. The Project is located in Section 31, Township 28 South, Range 38 East, (T28S, R38E), Mount Diablo Base and Meridian (MDB&M) (Project Area). The elevation of the Project Area ranges from approximately 3,200 to 3,450 feet above mean sea level. Figure 1 (Appendix A) shows the location of the Project Area.

3.2 Surface Ownership of the Land within the Area of Operation

The LaPozz claims encompasses approximately 150 acres of public lands administered by the BLM's Ridgecrest Field Office.

3.3 Description of Area to be Disturbed

Principal components of the Project are shown on Figure 2 (Appendix A) and include the following: 1) proposed mining area (opaline silica caprock) and limits of disturbance; 2) initial stockpile area; 3) initial site of portable crusher plant; 4) maintenance of three miles of existing dirt access roads; 5) widening 3,386 feet of existing dirt access road from a width of 12 to 15 feet; and 6) reclaim the Project Area consistent with post-mining land use. Existing surface disturbance from exploration activities consists of 0.35 acre. Proposed surface disturbance related to drilling, blasting, excavation, stockpiling and crushing activities within the opaline silica caprock deposit is 18.3 acres. In addition, a maximum of 14.4 acres of operational disturbance adjacent to the deposit may occur for grader and dozer access, as needed. Current and proposed surface disturbance within the Project Area will total approximately 33.28 acres. Table 1 summarizes the approved and proposed Project disturbance.

Table 1: Acreage of Approved and Proposed Project Disturbance

Component	Surface Disturbance (acres)		
	Existing Disturbance Exploration (CACA-48524)	Proposed Disturbance	Total
Opaline Silica Caprock	0.35	18.30	18.65
Peripheral Operational Disturbance	0.00	14.40	14.40
Widen Access Road	0.00	0.23	0.23
Total	0.35	32.93	33.28

3.4 Description of Operations

Proposed Mining Activities

Over the life of operations, mining activities will occur in eight to 14 phases. During each mining phase, approximately 30,000 to 100,000 tons of rock will be drilled, blasted, crushed and stockpiled. Depending on required annual production, it is anticipated that up to two phases will be drilled, blasted and crushed per year.

CalPortland will contract the drilling and blasting activities for the Project to a California licensed drilling and blasting contractor. Drilling will require nine to 15 days per phase, and will utilize a track-mounted crawler drill. The shots will consist of 100 to 150 holes with a 2.5- to three-inch diameter. The opaline silica being mined measures nine to 12 feet thick, which will yield approximately 10,000 tons per shot. The blasting materials will typically be ammonium nitrate and fuel oil (ANFO), blasting caps and cast boosters using either a nonel or an electric detonating system initiating system utilizing surface delays. Blasting practices and procedures continue to improve throughout time and CalPortland reserves the right to modify the blasting practices to improve or update the blasting procedures and types of explosives. Also, unforeseen circumstances such as, manufacturing shortages of certain materials may require changes in the blasting procedure. Once the material has been blasted, a loader will feed the shot material to the portable crushing plant. The proposed location of the initial (Phase 1) mining area and stockpile location is shown in Figure 2 (Appendix A).

This Project is necessary to provide a source of pozzolan for CalPortland's Mojave cement plant to produce pozzolan cement as a CO₂ reduction measure pursuant to the emission reduction requirements of AB-32. In addition to the CO₂ reduction benefit, new pozzolan sources are needed to replace or augment supplies of Class F fly-ash. One of the most common pozzolanic cement substitutes, fly-ash is the was product of coal-fired power generation. As coal use is phased out, fly-ash sources will diminish. Further, as scrubber technology by the power plants is becoming more widely used, the scrubber equipment produces a waste by-product that contains contaminants unsuitable to cement chemistry. Therefore, as additional coal-fired power plants implement the scrubber technology, fewer supplies of fly-ash will be available, requiring other natural sources to be discovered and mined to meet the needs of the cement industry. The other current pozzolan used in the marketplace is blast furnace slag. However, no such slag is produced in the western United States, and any slag sources would need to be imported from Asia. Increased green house gas emissions would be associated with long-distance transport.

Material Processing

CalPortland will contract the crushing and stockpiling of the material to a California licensed contractor operating a permitted portable crushing system. Crushing will be conducted on site within the area defined by the perimeter of the opaline silica caprock as shown in Figure 2 (Appendix A). A loader will transport the shot rock from the blast site to the feed hopper of the portable crusher. The crushed material will be transported by conveyor from the crusher to the finished material stockpile. Crushing will require approximately one week per 10,000 tons, or typically three to five weeks per mining phase. Crushing will be conducted on an annual or biannual cycle with the crusher

removed from the Project Area during the interim periods. The initial (Phase 1) location of the portable crushing plant is shown on Figure 2 (Appendix A).

Project Access and Transportation

CalPortland will utilize the existing dirt access roads, which connect with State Highway 14, to transport the crushed rock to the Mojave plant. Approximately four trips per day using eight to ten trucks will be made during hauling activities. Figures 1 and 2 s(Appendix A) how access roads to the Project.

Work Force

The work force for the Project will range between two and five employees on site during drilling and blasting activities, between three and five employees during operating and crushing activities, and between two and six employees during truck loading activities.

Power Supply and Utilities

No utilities will be constructed on the Project site. The equipment and crusher will be operated on diesel fuel.

Mobile Equipment

The following is a list of equipment that may be used during operations on site:

- Crawler drill(s), IR ECM-620, or equivalent;
- One D-6 Dozer or equivalent;
- One motor grader;
- One water truck;
- One portable crushing plant;
- Up to four service vehicles/pickup trucks;
- Triple axle highway trucks (number of trucks and loads depends on production level); and
- Loader(s), up to 988 or equivalent.

Project Security

To ensure public safety and to protect seeded areas from disturbance, warning signs will be posted throughout the Project Area. CalPortland will dismantle and remove warning signs upon cessation of the Project and successful reclamation. A night watchman may be employed while equipment is at the Project Area.

3.5 Schedule of Operations

Activities associated with the mining will commence as soon as this Plan is considered complete and the National Environmental Policy Act (NEPA) process is implemented and completed. The mining and hauling activities will be performed on a seasonal and intermittent schedule that will vary based

on biological constraints and weather. The estimated life span of the Project is approximately 20 years. All operations will be conducted during daylight hours.

3.6 Existing Disturbance

Existing surface disturbance in the Project Area consists of approximately 0.35 acre of land associated with the previously permitted exploration activities, which included the installation of 12 test holes and the removal of 10,000 tons of rock from the Project Area for testing.

4 OPERATING PLANS

4.1 Water Management Plan

Not applicable. There is no surface water in the Project Area or immediate vicinity. Water will be brought on site in a water truck for use in dust control.

4.2 Spill Contingency Plan

A Spill Contingency Plan is located in Appendix B.

4.3 Access Route Maintenance Plan

No new roads will be constructed; however, a grader will perform maintenance on the three miles of access roads to the Project Area, as needed. The roads will only be maintained for safe passage. Maintenance will include smoothing ruts, bumps, and washouts created by seasonal storms. A small section of the access road, measuring approximately 3,386 feet, may be widened from the existing 12 foot width to 15 feet in order to straighten out the alignment and facilitate access by triple axle haul vehicles. The widening will be kept to a minimum and will avoid all identified cultural sites.

4.4 Fire Management Plan

CalPortland will take steps to prevent fires by ensuring that each field vehicle carries appropriate hand tools and a fire extinguisher(s). Water trucks at the Project Area will be used in the event of a fire. During extended periods of time of non-operation or seasonal closure, all equipment and supplies will be removed from the Project Area. All applicable state and federal fire laws and regulations will be complied with and all reasonable measures will be taken to prevent and suppress fires in the Project Area.

4.5 Solid and Hazardous Wastes Plan

All refuse generated by Project activities will be disposed of at an authorized off-site landfill facility, consistent with applicable regulations. No refuse will be disposed of on site.

On-site fueling of the off-road equipment (drill, loader, grader, and water truck) and portable crushing plant will be done from a portable diesel tank. All other vehicles will be fueled off site. Approximately 100 gallons of diesel fuel and gasoline will be stored in fuel delivery systems on the support equipment and dump trucks. In the event hazardous or regulated material, such as diesel fuel, is spilled, measures will be taken to control the spill and the BLM, and/or the California Regional Water Quality Control Board (Regional Board) will be notified, as required. Contractors will maintain spill kits on site for use in case of a spill. In addition, CalPortland has a Spill Contingency Plan that will be implemented in the event of a spill (Appendix B).

4.6 Environmental Protection Measures

In addition to the plans discussed above the following activities have been completed and the following environmental protection measures will be implemented as part of the Project.

Baseline Studies

In order to identify and assess the resources present within the Project Area, the following studies have been conducted for the Project Area:

- CalPortland contracted with Enviroscientists, Inc. to conduct a botanical survey of the LaPozz Project Area. This survey was conducted between April 14 and 15, 2010. A sensitive plant species survey and vegetation transect cover and density survey were also completed at this time.
- Enviroscientists completed a desert tortoise and area of influence survey of the LaPozz Project Area. This survey was conducted in May 2008.
- CalPortland, through Enviroscientists, contracted with ASM Affiliates, Inc. to complete a cultural inventory of the Project Area. This survey was completed in February 2009.

Resource Protection Measures

CalPortland will commit to the following environmental protection measures to prevent unnecessary or undue degradation during Project activities. The measures are derived from the general requirements established in the BLM's Surface Management Regulations at 43 CFR 3809 as well as other water and air quality regulations, and desert tortoise protocol established by the U.S. Fish and Wildlife Service (USFWS).

Air Quality

- An air permit will be obtained from Kern County and all stipulations will be followed.
- Emissions of fugitive dust from disturbed surfaces will be minimized by utilizing appropriate control measures. Surface application of water from a water truck and speed limit controls are the proposed methods of dust control.

Cultural and Paleontological Resources

- Pursuant to 43 CFR 10.4(g), CalPortland will notify the BLM authorized officer, by telephone, and with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR 10.2). Further pursuant to 43 CFR 10.4 (c) and (d), the operator will immediately stop all activities in the vicinity of the discovery and not commence again for 30 days or when notified to proceed by the BLM authorized officer.

- CalPortland will not knowingly disturb, alter, injure, or destroy any scientifically important paleontological deposits. If CalPortland discovers any scientifically important paleontological resource that might be altered or destroyed by operations, the discovery will be left intact and reported to the authorized BLM officer.
- CalPortland will avoid or mitigate any eligible or unevaluated historical or archaeological site, structure, building, or object. If CalPortland discovers any cultural resource that might be altered or destroyed by operations, the discovery will be left intact and reported to the authorized BLM officer.
- Any survey monuments, witness corners, or reference monuments will be protected to the extent economically and technically feasible. In the event of monument obliteration, CalPortland will immediately report the incident, in writing, to the Authorized Officer and the respective installing authority.

Public Safety

- Public safety will be maintained throughout the life of the Project. All equipment and other facilities will be maintained in a safe and orderly manner.

Special Status Species and Wildlife

Desert Tortoise Stipulations

1. Measures that will be taken to minimize take of desert tortoises due to Project-related activities.
 - a. The BLM, or their designee, will provide a fact sheet to all foremen, workers, and other employees working on the Project. The fact sheet will include information on the life history of the desert tortoise, legal protection for desert tortoises, penalties for violations of federal and state laws, general tortoise activity patterns, reporting requirements, measures to protect tortoises, terms and conditions of the biological opinion, and personal measures employees can take to promote the conservation of desert tortoises. The definition of "take" will also be explained. Workers are encouraged to carpool to and from Project Area. The fact sheet will be approved by the USFWS prior to implementation.
 - b. A speed limit of 25 miles per hour will be required for all vehicles on the Project Area and unposted dirt access roads.
 - c. During construction activities, tortoise burrows will be avoided whenever possible. If a tortoise is found on site during Project activities that may result in take of the tortoise (e.g., in harms way), such activities will cease until the tortoise moves, or is moved, out of harms way. The tortoise will be moved by either a qualified tortoise biologist or individual trained in the proper technique of handling and moving desert tortoises. All workers will also be instructed to check underneath all vehicles before moving such vehicles. Tortoises often take cover under vehicles.

- d. A tortoise biologist will not be required on site during construction activities unless explicitly determined by the BLM, or BLM and USFWS, that an on-site biologist is necessary.
 - e. The search for, and removal of, tortoises (i.e., clearance) is voluntary, unless explicitly required by the BLM, or BLM and USFWS. If tortoise clearance is not required, applicants or Project proponents may voluntarily choose to search for and remove tortoises from lands to be disturbed within the Project Area. However, Project proponents that voluntarily choose to clear Project Areas of desert tortoises, will follow measures required in terms and conditions of this biological opinion. Specific and detailed instructions will be provided on the proper techniques to capture and move tortoises which appear on site, in accordance with Service-approved protocol. Currently, the USFWS-approved protocol is Desert Tortoise Council 1994, revised 1999.
 - f. The Project will not require fencing unless determined by the BLM, or BLM and USFWS, that fencing is necessary. Projects that generally require fencing are large projects with a high level of ongoing activity, such as gravel pits and airports.
 - g. Desert tortoises encountered experiencing heat stress will be placed in a tub by a qualified tortoise biologist with one inch of water in an environment with a temperature between 76 degrees Fahrenheit (°F) and 95 °F for several hours, until heat stress symptoms are no longer evident.
 - h. Tortoises and nests found will be relocated by a qualified tortoise biologist in accordance with Service-approved protocol (Desert Tortoise Council 1994, revised 1999). Burrows containing tortoises or nests will be excavated by hand, with hand tools, to allow removal of the tortoise or eggs.
 - i. Tortoises that are moved off site and released into undisturbed habitat on public land, must be placed in the shade of a shrub, in a natural unoccupied burrow similar to the hibernaculum in which it was found, or in an artificially constructed burrow in accordance with Desert Tortoise Council (1994, revised 1999).
 - j. Desert tortoises moved during the tortoise inactive season or those in hibernation, regardless of date, must be placed into an adequate burrow. If one is not available, one will be constructed in accordance with Desert Tortoise Council (1994, revised 1999). During mild temperature periods in the spring and early fall, tortoises removed from the site will not necessarily be placed in a burrow.
2. Measures to be taken to minimize predation on tortoises by ravens drawn to the Project Area.
- This will involve a litter-control program. This program will include the use of covered, raven-proof trash receptacles, removal of trash from the construction site to the trash receptacles following the close of each work day, and proper disposal of trash in a designated solid waste disposal facility. Vehicles hauling trash to the landfill and leaving the landfill must be secured to prevent litter from blowing out along the road.

3. Measures to be taken to minimize destruction of desert tortoise habitat, such as soil compaction, erosion, or crushed vegetation, due to Project-related activities.
 - a. If possible, overnight parking and storage of equipment and materials, including stockpiling, will be within previously disturbed areas or areas to be disturbed.
 - b. All vehicle traffic will be restricted to existing access roads where possible. New access roads will be created only when absolutely necessary and only when approved by the BLM.
 - c. Project activity areas will be clearly marked or flagged at the outer boundaries before the onset of construction. All activities will be confined to designated areas. Blading of vegetation will occur only to the extent necessary and will be limited to areas designated for that purpose by the BLM.
 - d. Remuneration fees apply to future disturbance in tortoise habitat. Past disturbance or disturbance on land not considered to be tortoise habitat by a tortoise biologist, and approved by the BLM, are not assessed a tortoise remuneration fee. Remuneration fees will be used to fund management actions which are expected to benefit the desert tortoise. Actions may involve the following: Habitat acquisition; population or habitat enhancement or protection; research that increases our knowledge of desert tortoise biology, habitat requirements, or factors affecting habitat attributes; reducing loss of individual animals, documenting the species' current status and trend, and preserving distinct population attributes or any other action described in the Management Oversight Group's report titled Compensation for the Desert Tortoise (Hastey, et al. 1991) or Recovery Plan.
 - f. Habitat reclamation will only be required if identified through the NEPA process or determined to be appropriate by the BLM wildlife staff.
4. Measures will be taken to ensure compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and consultation reinitiation requirements.
 - a. The Project applicant will notify the BLM at least ten days before initiation of the Project. Notification will be made to the BLM's wildlife staff at 760-384-5400.
 - b. The BLM wildlife staff (760-384-5400) must be notified of any desert tortoise death or injury due to the Project implementation by close of business on the following work day.
 - c. All appropriate USFWS permits or letters of authorization will be acquired prior to handling desert tortoises and their parts, and prior to initiation of any activity that may require handling tortoise.
 - d. The Project proponent must submit a document to the BLM within 30 days of completion of the Project showing the number of acres disturbed, remuneration fees paid, and number of tortoises taken, which includes capture and displacement, killed,

injured, and harassed by other means, during implementation of programmatic actions.

Migratory Birds

- To prevent undue harm to migratory birds, Project activities will be scheduled outside bird breeding season if possible. In upland desert habitats and ephemeral washes containing upland species, the migratory bird breeding season generally occurs between March 15 and July 30. If the Project could alter any breeding habitat during the migratory bird breeding season, then a qualified biologist will survey the Project Area for nests prior to commencement of surface disturbing activities. This will include a survey for burrowing and ground nesting species in addition to those nesting in vegetation. If any active nests (containing eggs or young) are found, an appropriately-sized buffer area will be avoided until the young birds fledge.

Soil and Water Resources

- A Storm Water Pollution Prevention Plan (SWPPP) will be implemented to control sedimentation from the Project disturbance. BMPs will be installed to manage stockpile areas and other disturbed surfaces. Sediment control structures could include, but not be limited to, fabric and/or hay bale filter fences, siltation or filter berms, and downgradient drainage channels in order to prevent unnecessary or undue degradation to the environment.
- Driving on access roads that cross ephemeral washes will be prohibited when water is present.

Vegetation

- Reclamation will occur following each phase of mining which will include recontouring, scarification, and reseeded.

5 RECLAMATION PLAN

Reclamation will be completed to the standards described in 43 CFR 3809.420. The annual drilling and blasting activities will take nine to 15 days per phase. Crushing will require three to five weeks per mining phase, with the crushed material conveyed to a stockpile for subsequent loading and hauling to CalPortland's Mojave cement plant. Following the removal of the cap rock, a layer of sandy soil will be exposed. The disturbed area will be smoothed and ripped with a dozer or loader and recontoured to the original shape. There is no topsoil because the area contains mostly solid or broken rock. There is little existing vegetation; however, a seed mix approved by the BLM will be broadcast over the flat areas of the disturbance. CalPortland does not propose to reclaim any of the existing access roads under this Plan. There are no riparian areas that will be affected by the Project. There are no acid-forming, toxic, or deleterious materials associated with the Project. There are no structures, buildings, or support facilities associated with the Project.

5.1 Schedule of Reclamation

CalPortland will conduct reclamation of disturbed areas associated with the mining activities concurrently, as feasible, after the material excavation is completed. Based on the planned phasing of the mining activities, some areas will not be reclaimed concurrently if they will be subject to further disturbance (i.e. location of portable crusher or stockpiles). However, CalPortland will minimize the total area of unreclaimed mined out areas throughout the life of the Project. Revegetation activities are limited by the time of year during which they can be effectively implemented. Site conditions and/or yearly climatic variations may require that this schedule be modified to achieve revegetation success. Where it has been determined that revegetation success has not been met, the BLM and the operator will meet to decide on the best course of actions necessary to meet the reclamation goal.

5.2 Post Mining Land Use

Reclamation activities will be designed to achieve post mining land uses consistent with the BLM's land use management plans for the area, which are outlined in the BLM's West Mojave Resource Management Plan Amendment (BLM 2003). Post-mining land use includes wildlife habitat, livestock grazing, hunting, and dispersed recreation.

5.3 Buildings, Structures, and Equipment Removal

No buildings or temporary structures will be built. All equipment and supplies will be removed following completion of drilling and blasting activities and subsequently the crushing and hauling activities. Other materials, including scrap, trash, and unusable equipment will be removed on a regular basis and disposed of off site in accordance with federal and state regulations and laws.

5.4 Post Closure Management

The goal of CalPortland is to return the Project Area to a natural, safe, maintenance-free condition. Annual vegetation surveys will be conducted with the BLM to monitor revegetation success and determine when the Standard of Release has been achieved, usually after three years.

5.5 Measures to be Taken During Extended Periods of Non-Operation to Maintain the Area in a Safe and Clean Manner and to Reclaim the Land to Avoid Erosion and Other Adverse Impacts

CalPortland will notify the BLM in the event of a temporary closure of the mining activities and ensure that appropriate measures are taken to prevent erosion and sediment transport off site. In the event that mining activities are interrupted due to unforeseen circumstances, interim reclamation will be initiated, as necessary. All erosion control measures and BMPs will be regularly inspected and maintained as described in the Project SWPPP. All equipment will be protected from public access and maintained as necessary.

During extended periods of non-operation or seasonal closure of the mining activities, all equipment and supplies will be removed from the Project Area.

6 MONITORING PLAN

CalPortland will conduct daily visual inspections of the Project Area in which drilling, crushing and truck loading activities are active. Operations will be conducted utilizing BMPs to insure no unnecessary or undue degradation will result from any of the proposed activities. All staff and employees will be encouraged to be aware and report any potential problems before they occur. Environmental protection measures will be taken to minimize impacts to desert tortoise as discussed in Section 4.7.

6.1 Compliance with the Approved Plan of Operations and Other Federal and State Environmental Laws and Regulations

The proposed activities outlined in this Plan will be conducted under 43 CFR 3809 upon BLM approval of this Plan. The mining activities will also be conducted under the SMARA regulations for Kern County. USFWS protocol will be used to protect desert tortoise, if they are identified in the Project Area.

6.2 Provide Early Detection of Potential Problems

CalPortland will monitor all activities and will communicate with the BLM as soon as possible should potential problems be encountered.

6.3 Supply Information That Will Assist in Directing Corrective Actions Should They Become Necessary

CalPortland addresses corrective actions in Section 4.7 Environmental Protection Measures and in the Spill Contingency Plan located in Appendix B. CalPortland will work with the BLM to ensure that corrective action measures are appropriate for the Project Area and meet resource management directives.

7 INTERIM MANAGEMENT PLAN

The following discussion includes those topics that are pertinent to the planned operations.

7.1 Measures to Stabilize Excavations and Workings

Following the drilling, blasting, and excavation of material, the exposed soil will be recontoured, scarified and reseeded or stabilized until revegetation is appropriate. If necessary, filter fabric, straw or mulch will be used to stabilize exposed soils. CalPortland will only complete final reclamation on an area when no further disturbance is planned in that area, but temporary stabilization measures will be applied during periods of non-operation to prevent erosion. A SWPPP will be prepared for the Project that will detail temporary and permanent BMPs that will be followed throughout the life of the Project.

7.2 Measures to Isolate or Control Toxic or Deleterious Materials

There are no toxic or deleterious materials associated with Project activities. The Spill Contingency Plan located in Appendix B is designed to control any accidental spills.

7.3 Measures to Maintain the Project Area in a Safe and Clean Condition

CalPortland will conduct regular periodic inspections of the Project Area.

7.4 Schedule of Anticipated Periods of Temporary Closure

The mining and hauling activities will be performed on a seasonal and intermittent schedule that will vary based on biological constraints and weather. CalPortland will notify BLM of their proposed schedule of operations and closures on an annual basis.

7.5 Temporary or Seasonal Closure

As feasible, all disturbed areas will be reclaimed prior to temporary or seasonal closure, all equipment will be removed from the Project, and the site will be left in a state that will not create hazards for the public or wildlife. Final reclamation and reseeded will not be done on areas subject to future disturbance (i.e. location of portable crusher or stockpile), but these areas will be stabilized using temporary BMPs to prevent erosion or sedimentation.

8 STATEMENT OF ASSUMPTION OF RECLAMATION RESPONSIBILITY

CalPortland agrees to accept the responsibility for reclamation of all surface disturbance associated with the Project detailed under this Plan per 43 CFR 3809.400.

9 RECLAMATION COST ESTIMATE

The reclamation cost estimate (Appendix C), as required by 43 CFR 3809.552, is included in this Plan. The reclamation tasks are set forth in the text and the Reclamation Cost Estimate (Appendix C), for the Project activities, to follow the bond release criteria established in 43 CFR 3809.400.

The following assumptions have been made in calculating the reclamation cost estimate:

- The total area that will be subject to reclamation includes 18.3 acres following the removal of the opaline silica cap rock in addition to 14.4 acres surrounding the deposit for a total of 32.7 acres (excludes 0.23 acre access road).
- The existing roads will not be reclaimed;
- The earthwork will be completed with a D6 Caterpillar dozer or equivalent;
- The areas disturbed will be broadcast seeded using a seed mix appropriate for the Mojave Desert; and
- The total estimated reclamation cost for the total planned disturbance contained in this Plan is **\$24,831**.

10 EFFECT OF PROPOSED RECLAMATION ON PUBLIC SAFETY

No unnatural hazards will exist during or after reclamation in the disturbed/reclaimed areas.

11 ACKNOWLEDGMENTS

It is understood that should the nature of the operation change, a modified or supplemental plan of operations and reclamation may be required.

It is understood that approval of this Plan does not constitute: (1) Certification of ownership to any person named herein; and (2) Recognition of the validity of any mining claim herein.

It is understood that a bond equivalent to the actual cost of performing the agreed upon reclamation measures will be required before this Plan can be approved. Bonding and any bond reduction amounts will be set on a site-specific basis by the lead agency in coordination with the cooperating agencies.

It is understood that approval of this Plan does not relieve the undersigned of responsibility to comply with any other applicable state or federal laws, rules or regulations.

It is understood that any information provided with this Plan that is marked confidential will be treated by the agency in accordance with that agency's laws, rules and regulations.

On behalf of CalPortland, I have reviewed and agree to comply with all conditions in this Plan, including the recommended changes and reclamation requirements. I understand that the bond will not be released until the BLM gives written approval of the reclamation work.

CalPortland Company

By



Date May 24, 2010

Ed Harrison
Chief Mining Engineer

12 REFERENCES

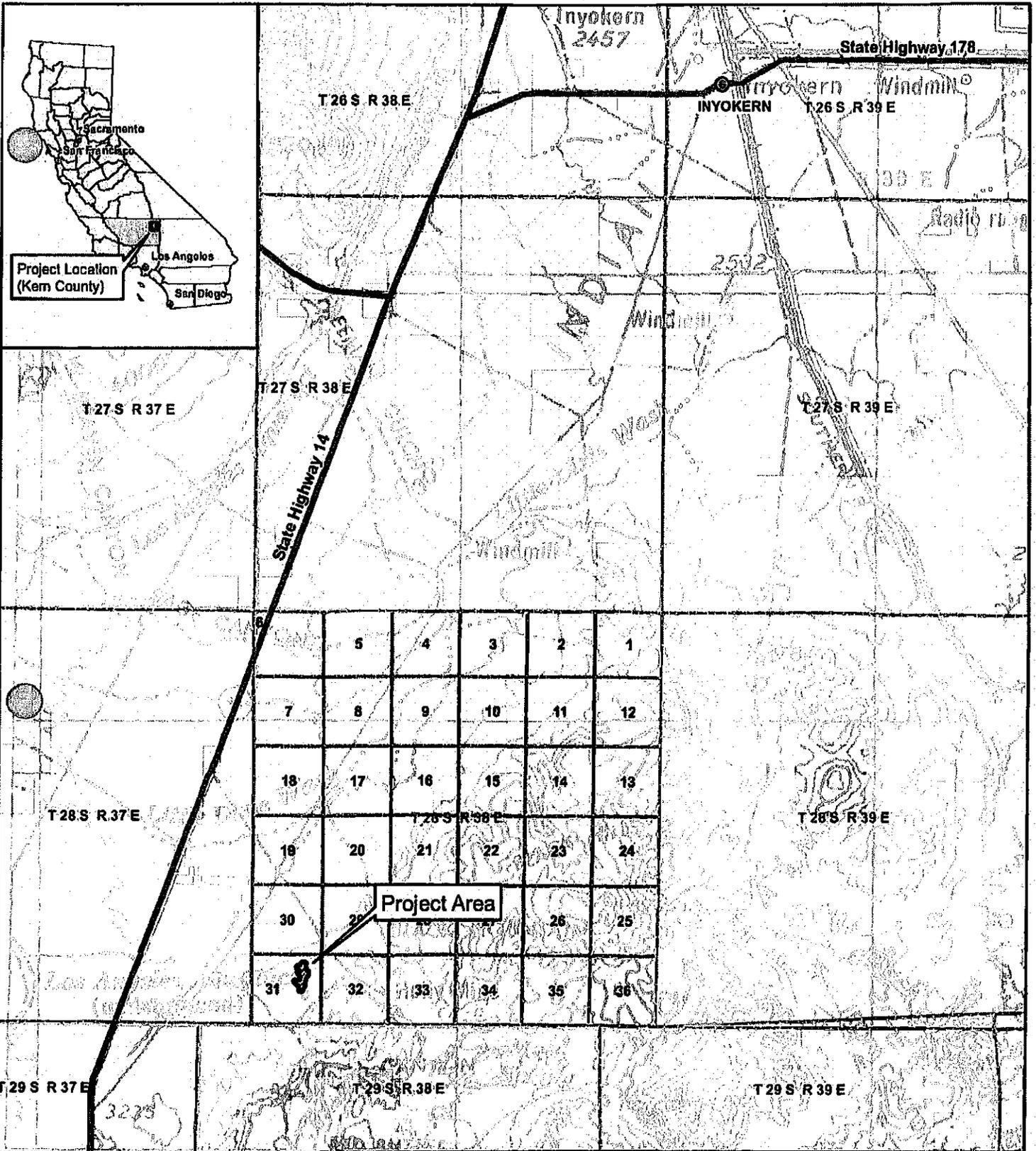
Bureau of Land Management (BLM). 1992. *Solid Minerals Reclamation Handbook*.

_____. 2003. *West Mojave Resource Management Plan Amendment*.

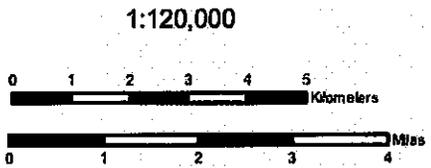
U.S. Fish and Wildlife Service (USFWS). Region 1. 1994. *Desert Tortoise (Mojave Population) Recovery Plan*. Prepared by Desert Tortoise Recovery Team June 28, 1994.

APPENDIX A

FIGURES



- Explanation**
-  Project Area
 -  Township/Range
 -  Sections
 -  Bureau of Land Management Lands



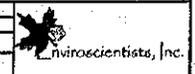
Projection: UTM Zone 11 North, NAD27

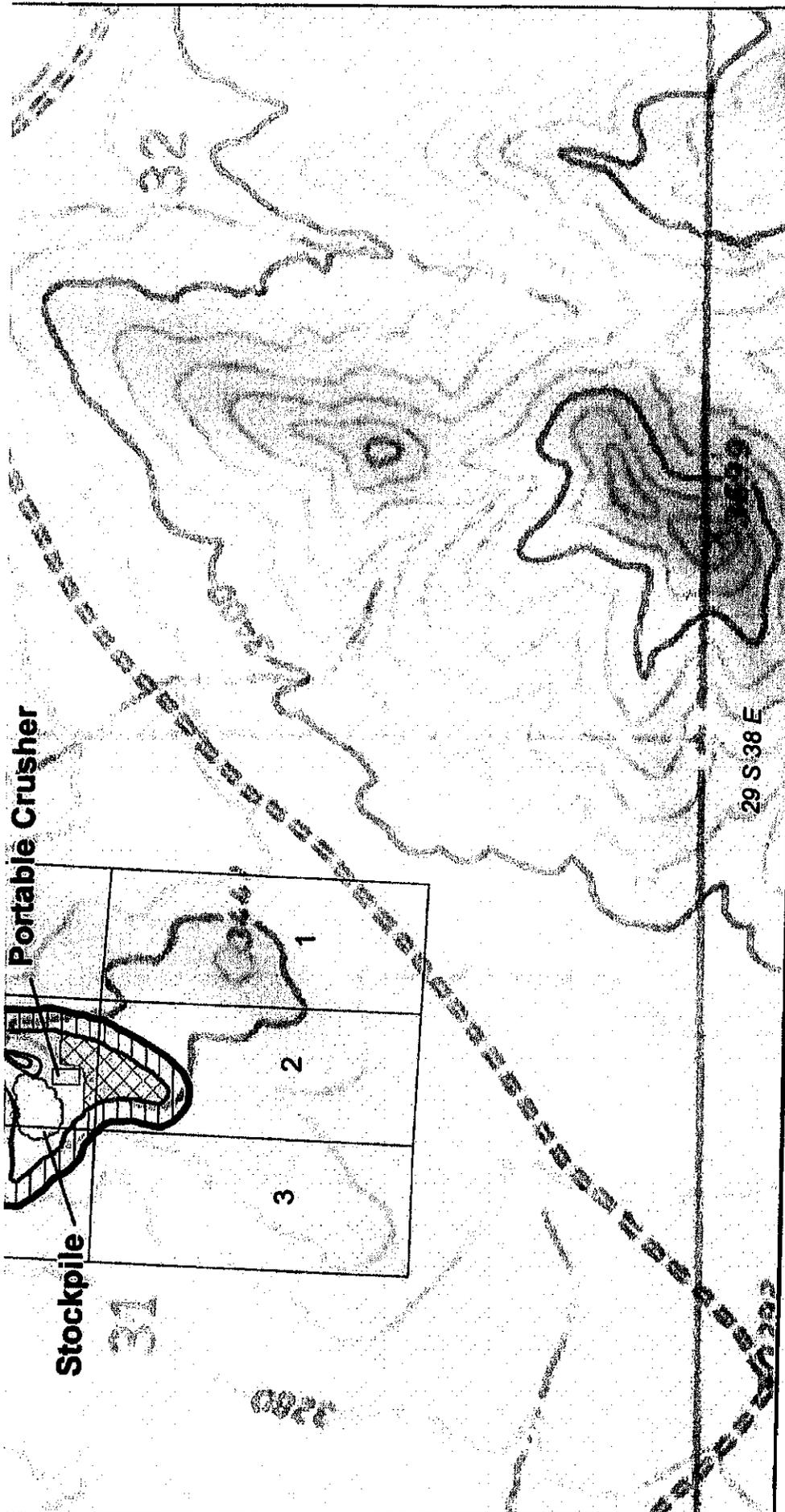
CALPORTLAND COMPANY

Project Location and Land Status

Figure 1

Date: 04/2/2010	Drawn By: GSI
Revised:	Project No.: 2150
Base Map: USGS 250 K Trona	
File Name: 2150X_Lapozz_LandStatusMap.mxd	





CALPORTLAND COMPANY

Lapozz Project

Project Map

Figure 2

Date:	05/09/2010	Drawn By:	GSL
Revised:		Project No.:	2150
Base Map:	Saltdale NW 24K quad		
File Name:	2150_Lapozz_ProjectArea.mxd		

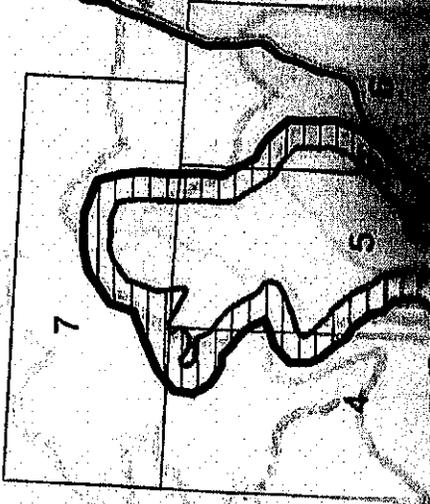
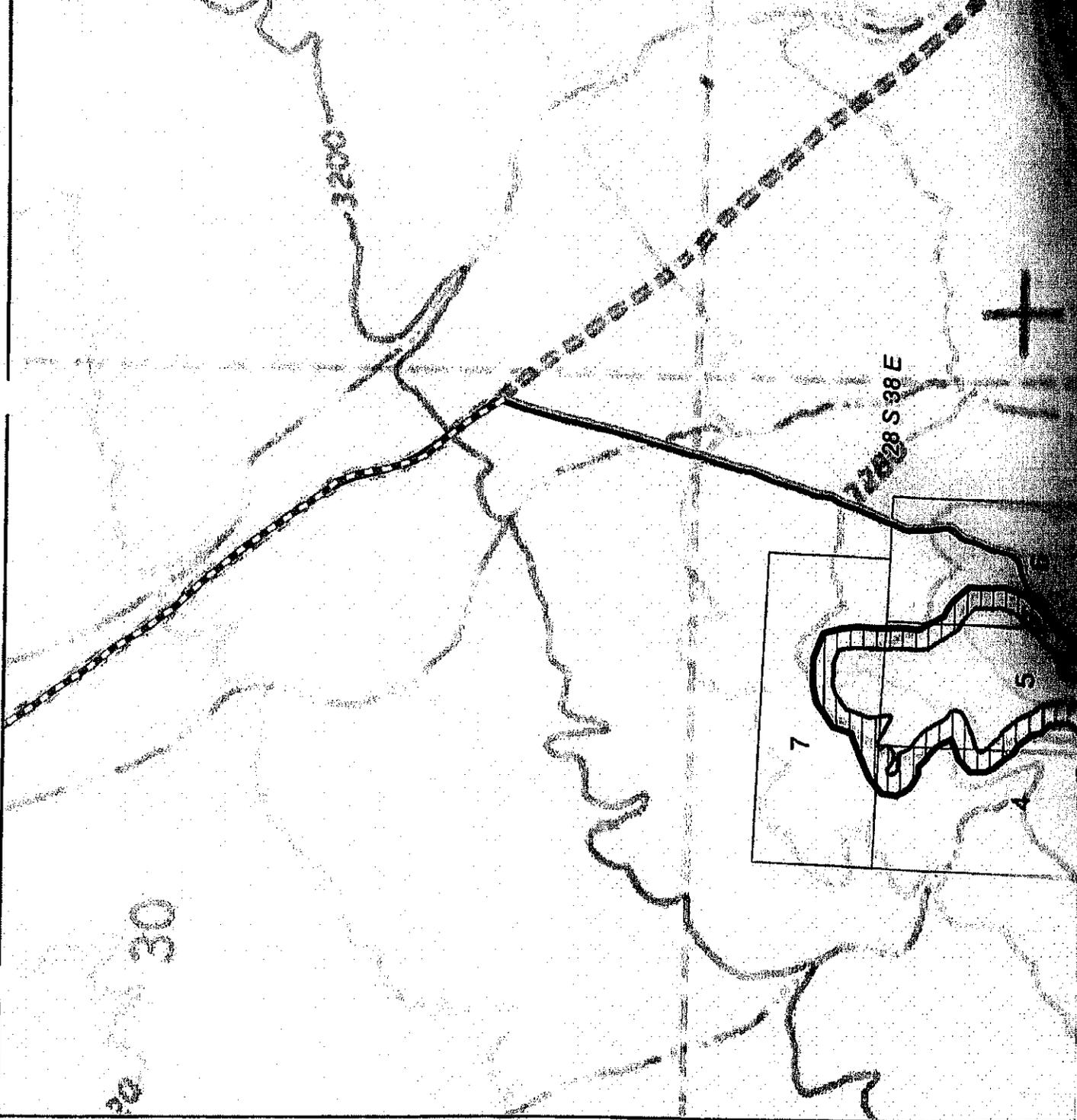
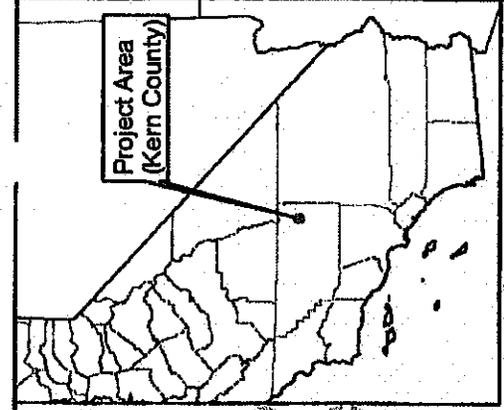
 Environmental Scientists, Inc.

Explanation

-  Existing Access Road
-  Widened Road
-  Existing Unpaved Dirt Road
-  Initial (Phase 1) Mining & Reclamation Area
-  Limits of Disturbance
-  Portable Crusher
-  Initial (Phase 1) Stockpile Area
-  Opal Caprock
-  Mining Claims

Projection: UTM Zone 11 North, NAD83

Project Area
(Kern County)



APPENDIX B

SPILL CONTINGENCY PLAN

**LAPOZZ PROJECT
KERN COUNTY, CALIFORNIA
SPILL CONTINGENCY PLAN**

OBJECTIVES

The purpose of this Spill Contingency Plan (Plan) is as follows:

- To identify all pollutant sources that may exist within the LaPozz Project Area.
- To identify Best Management Practices (BMPs) to prevent or reduce the quantity of potential pollutants discharged to the ground or surface water in order to minimize environmental impacts during and after the exploration project.

AVAILABILITY

A copy of this Plan will be attached to the Project's Operating Plan, along with the Material Safety Data Sheets (MSDS) (Attachment 1) of all products used on site for vehicle maintenance or the exploration program and identified BMPs (Attachment 2). All contractors are responsible for familiarizing their personnel with the information pertaining to BMPs and spill prevention.

PREVENTIVE MAINTENANCE

Good housekeeping practices will be followed on site during the project:

- An effort will be made to store only enough product required to do the job.
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products will be kept in their original containers with the original manufacturer's label.
- Manufacturers' recommendations for proper use and disposal will be followed.
- The Project Manager will inspect daily to insure proper use and disposal of materials on site.

The contractor will have a vehicle preventive maintenance program to insure that all vehicles are operating under optimum conditions and all hoses and fittings are in good condition and leak free. It is the responsibility of the operator, mechanic, tool pusher or other designee, to execute the repairs or preventive maintenance and complete any reporting required. Assignment for repair when equipment is in a remote location may be issued verbally by the field superintendent or district manager.

SOURCE IDENTIFICATION

Pollutants

Potential sources of pollutants from drilling rigs, service vehicles, and other equipment includes oil, fuel, and lubricating grease. Additional sources of pollutants may include hydraulic fluid, solvents, trash and other debris. These pollutants are not expected to come into contact with on-site soils or surface waters; however, BMPs will be utilized to prevent potential release of contaminants.

Construction Debris

To minimize impacts during precipitation events, trash bins will be regularly inspected for leaks.

Spill Contingency Plan

Materials and equipment necessary for spill cleanup will be kept in the material storage area on site. Equipment and materials will include but not be limited to brooms, dust pans, mops, rags, gloves, goggles, sorbent materials, sand, sawdust, and plastic and metal trash containers specifically for this purpose.

Well-maintained equipment will be used to perform the work, and when practicable, equipment maintenance will be performed off site. In the event of oil, fuel, and lubricating grease leaks, clean-up will be conducted as soon as possible. If the leak is on pavement or a compacted surface, an oil absorbing product such as Absorb[®] will be applied. Once the clean up product has absorbed the leaked material, it will be swept up into watertight drums or bins, and disposed of according to federal, state, or local regulations. If the leak occurs on soil, the contaminated soil will be removed and disposed of according to federal, state, or local regulations. In the event of a major spill the following actions should be taken in addition to any federal, state, and local health and safety regulations:

1. Contain the spread or migration of the spill, using on-hand supply of erosion control structures and/or by creating dirt berms, as feasible and necessary. Also utilize the materials and equipment stored onsite to control the spill.
2. Notify the environmental or project manager immediately.
3. Within 24 hours of an identified and reportable spill, the site manager or a designated representative will notify the following local and state agencies:
 - BLM, Ridgecrest Field Office - (760) 384-5400
 - Kern County Environmental Health Services - (661) 826-8700
 - Emergency Response Hotline - (888) 331-6337

In case of an emergency, relevant phone numbers are provided below:

Emergency calls: 911 / (661) 861-3110 (Sheriff, Kern County)

Fire: 911 / (661) 324-6551 (Kern County Fire Department-Mojave)

Hospital (760) 446-3551 (Ridgecrest Regional Hospital)

4. This Plan will be adjusted to include measures to prevent this type of spill from occurring and how to clean up the spill if there is another occurrence. A description of the spill, what caused it, and the cleanup measures will also be included.

BEST MANAGEMENT PRACTICES

- During construction, water will be used for dust control. Water used for dust control will be sprayed over the ground at a rate which will moisten the soil but not cause runoff.
- It is the responsibility of the contractor to define construction staging areas to minimize footprint impacts, and to prevent impacts to water courses and other sensitive areas.
- The contractor is responsible for maintaining water-tight trash bins or dumpsters on the project site to minimize leakage to ground surface. Contractors will be responsible for maintaining contained areas for concrete wash-out and properly disposing of concrete, if used.
- The Project supervisor will at all times properly operate and maintain any facilities and systems of treatment and control (and related appurtenances).
- The following BMPs will be utilized as appropriate, and copies of each BMP are included in Attachment 2:
 - Material Delivery and Handling (WM-1)
 - Spill Prevention and Control (WM-4)
 - Solid Waste Management (WM-5)
 - Hazardous Waste Management (WM-6)
 - Liquid Waste Management (WM-10)

ATTACHMENT 1

MATERIAL SAFETY DATA SHEETS

Infosafe No. CV4SZ Issue Date: May 2007 ISSUED by DYNONOB
 Product Name: ANFO PS

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name ANFO PS
 Company Name Dyno Nobel Asia Pacific Limited
 Address Level 20, 111 Pacific Highway North Sydney
 NSW 2060
 Emergency Tel. 1800 098 836
 Telephone/Fax Tel: +61 2 9968 9000
 Number Fax: +61 2 9964 0170
 Recommended Use Explosive
 Other Names Name Product Code
 ANFO PS

2. HAZARDS IDENTIFICATION

Hazard Classification Not classified as Hazardous, according to criteria of National Occupational Health & Safety Commission, Australia (NOHSC).
 Classified as Dangerous Goods, according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.
 Risk Phrase(s) R2 Risk of explosion by shock, friction, fire or other sources of ignition.
 Safety Phrase(s) S34 Avoid shock and friction.
 S35 This material and its container must be disposed of in a safe way.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Name	CAS	Proportion
	Ammonium Nitrate	6484-52-2	30-60 %
	Polystyrene		30-60 %
	Mineral oil	--	0-10 %
	Dye	--	0-1 %

4. FIRST AID MEASURES

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing. If symptoms develop seek medical attention
 Ingestion Do NOT induce vomiting. Wash out mouth with water. If symptoms develop seek medical attention.
 Skin Wash area of contact thoroughly with soap and water until all oils and oxidisers are removed. Remove contaminated clothing. Launder clothing before re-use. Seek medical attention if irritation persists.
 Eye If contact with the eye(s) occurs, wash with copious amounts of water holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. If symptoms persist seek medical attention.
 First Aid Facilities Eye wash fountain, safety shower and normal washroom facilities.
 Advice to Doctor Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media DO NOT FIGHT FIRES. Immediately isolate area and evacuate personnel to a safe distance.
 Hazards from Combustion Products Products of combustion may contain oxides of nitrogen, ammonia, nitric acid, carbon monoxide, carbon dioxide and other toxic material.

DYNO
 Dyno Nobel

Groundbreaking Performance

Infosafe No. CV4SZ Issue Date : May 2007 ISSUED by DYNONOB
 Product Name : ANFO PS

Specific Hazards Avoid extreme conditions of heat or shock. May explode when heated in confined spaces. Will explode if suitably primed. Do not fight large fires. If a fire becomes established immediately isolate area and evacuate personnel to a safe distance. Toxic fumes may be generated as the product decomposes.

Hazchem Code E

Precautions in connection with Fire Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Use water spray to disperse vapours.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures Surplus or defective explosives must not be placed in any waterway, thrown away, discarded or placed with rubbish. Destruction of explosives must be carried out by suitably qualified personnel. If necessary, the relevant statutory authorities must be notified. In all circumstances, detonation is the preferred method of disposal. The residue from spills and the burning of explosives may be toxic to livestock and/or wildlife. Remove all sources of heat, sparks, flame, friction or electricity. Shovel or sweep up. Recover material into suitably labelled containers.

Small spills should be scooped up and placed in clean, approved containers which are then labelled and sealed. Where possible, all residues should be scraped up for disposal and an inert absorbent material such as sand or vermiculite spread over the area. For large spills, collect as much of the material as possible and place in clean, approved containers which are then labelled and sealed.

Other Information Contaminated bulk product recovered from a spill should be passed through a 10mm screen before pumping. The screened material should then only be pumped using a double diaphragm positive displacement pump.

7. HANDLING AND STORAGE

Precautions for Safe Handling Use smallest possible amounts in designated areas with adequate ventilation. Avoid sources of shock, friction, heat and ignition. Avoid contact with oxidising materials. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Label containers. Keep containers closed when not in use. Wear appropriate protective equipment to prevent inhalation, skin and eye contact. It is essential that all who come into contact with this material maintain high standards of personal hygiene ie. Washing hands prior to eating, drinking, smoking or using toilet facilities.

Conditions for Safe Storage Store in a cool, dry, well ventilated magazine licensed for Class 1.1D Explosives. Keep storage area free of sources of shock, friction, heat, ignition and combustible materials. Keep containers closed when not in use and securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Always keep in containers made of the same material as the supply container. Have appropriate fire extinguishers available in and near the storage area. Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous. Reference should be made to AS 2187.1-1998 Explosives - Storage, transport and use - Storage. Reference should also be made to all State and Federal regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards No exposure standards have been established for this material, however, the TWA National Occupational Health And Safety Commission (NOHSC) exposure standards for oil mist not otherwise specified is 5 mg/m³ (TWA) and exposure standards for dust not otherwise specified is 10 mg/m³.

Biological Limit Values No Biological limit available.

DYNO
 Dyno Nobel

Greenbreaking Performance

Infosafe No. CV4SZ Issue Date: May 2007

ISSUED by DYNONOB

Product Name: ANFO PS

Other Exposure Information

As a result of detonation of this product, oxides of nitrogen fumes may be liberated. Nitrogen oxides are skin, eye and respiratory system irritants. Systematic toxicity resulting from oxidation of lung tissue and bronchopneumonia. Acute exposure can lead to death from asphyxia or pulmonary oedema. In animals, nitrogen oxide caused methemoglobinemia, was not carcinogenic, but caused embryotoxicity and reproductive effects.

Carbon dioxide is a colourless, odourless gas. It is a simple asphyxiant, attacking the lungs, skin and cardiovascular system. Concentrations of 5% may produce shortness of breath and headache and concentrations of 10% can produce unconsciousness and death from oxygen deficiency. Adequate ventilation will provide sufficient protection from any carbon dioxide accumulations.

Carbon monoxide is a colourless, odourless, tasteless gas which, when inhaled, combines with haemoglobin to form carboxyhaemoglobin which interferes with the oxygen-carrying capacity of blood. Resulting symptoms include headache, dizziness, drowsiness, nausea, vomiting, collapse, coma and death. Carbon monoxide attacks the central nervous system, lungs, blood and cardiovascular system.

Do not enter any area where accumulations of these gases are suspected without appropriate breathing apparatus.

Engineering Controls

Use with good general ventilation. If mists or vapours are produced local exhaust ventilation should be used.

Respiratory Protection

If engineering controls are not effective in controlling airborne exposure then respiratory protective equipment should be used suitable for protecting against airborne contaminants. Final choice of appropriate breathing protection is dependant upon actual airborne concentrations and the type of breathing protection required will vary according to individual circumstances. Expert advice may be required to make this decision. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices.

Eye Protection

Safety glasses with side shields, goggles or full-face shield as appropriate recommended. Final choice of appropriate eye/face protection will vary according to individual circumstances i.e. methods of handling or engineering controls and according to risk assessments undertaken. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection

Wear gloves of impervious material (PVC or neoprene gloves. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection

Wear appropriate clothing including chemical resistant apron where clothing is likely to be contaminated. It is advisable that a local supplier of personal protective clothing is consulted regarding the choice of material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Small white or blue spheres
Melting Point	Not applicable
Boiling Point	Not applicable
Solubility in Water	Soluble
Specific Gravity	0.42 - 0.46
Vapour Pressure	Not applicable

DYNO
Dyno Nobel

Groundbreaking Performance

Infosafe No. CV4SZ	Issue Date: May 2007	ISSUED by DYNONOB
Product Name: ANFO PS		

Flash Point	Not applicable
Flammable Limits - Lower	Not applicable
Flammable Limits - Upper	Not applicable

10. STABILITY AND REACTIVITY

Conditions to Avoid	Avoid sources of heat and incompatible materials.
Incompatible Materials	Avoid contact with other explosives, pyrotechnics, solvents, acids, alkalis, reducing agents, amines, phosphorous, organic materials/compounds, finely divided combustible materials, finely divided metals and metal oxides.

11. TOXICOLOGICAL INFORMATION

Toxicology Information	For Mineral oil mist: LD50 (Oral, rats): 3782 mg/kgq
Inhalation	Inhalation of dust can cause severe respiratory tract irritation. May cause dizziness.
Ingestion	Not a likely source of exposure. However, ingestion of this product may irritate the gastric tract causing nausea and vomiting.
Skin	May cause redness, itching and irritation.
Eye	Eye contact may cause mechanical irritation. May result in mild abrasion.
Chronic Effects	Prolonged, repeated skin contact with mineral oils may cause irritant contact dermatitis.

12. ECOLOGICAL INFORMATION

Ecotoxicity	No data available for this specific product.
Persistence / Degradability	No data available for this specific product.
Mobility	No data available for this specific product.
Environ. Protection	Prevent this material entering waterways, drains and sewers.

13. DISPOSAL CONSIDERATIONS

DYNO
Dyno Nobel

Groundbreaking Performance

Infosafe No. CV4SZ Issue Date: May 2007

ISSUED by DYNONOB

Product Name: ANFO PS

**Disposal
Considerations**

Destruction of explosives must be carried out by suitably qualified personnel. If necessary, the relevant statutory authorities must be notified. In all circumstances, detonation is the preferred method disposal. The explosives to be destroyed must be placed in direct contact with fresh priming charge in a hole and then adequately stemmed. No detonators are to be inserted into defective explosives. Personnel must be evacuated to a safe distance in accordance with relevant local regulations prior to initiation of the charge.

NOTE: Detonations in loose or stony ground may be expected to cause fly rock.

BURNING:

Burning may result in the detonation of explosives. Burning explosives produces toxic fumes e.g. oxides of nitrogen and carbon.

Make a sawdust bed or trail adequate for the quantity of explosives to be burned approximately 400mm wide and 40mm deep, upon which the explosive will be laid. If sawdust is not available, newspaper may be used. Normal precautions should be taken against the spread of fire.

Individual trails should not be closer together than 600mm and should contain not more than 12kg of explosive.

Trails should be side-by-side, not in a line, and not more than four should be set up at one time. Remove any explosive that is not to be burnt to a distance of at least 300m.

Sufficient diesel oil (never petrol or other highly flammable liquid) should be used to thoroughly wet the sawdust (or paper). At least 4L per trail is recommended.

Light the trail from a long rolled paper 'wick' which should be placed downwind and in contact with the 1m of trail which is not covered with explosive. The wind should blow so that the flame from the wick (and later from the burning explosives) will blow away from the unburned explosives as detonation is more likely to occur if the explosives are preheated by the flame.

If plastic igniter cord (slow) is available, its use for lighting is recommended instead of paper. One end should be coiled into the sawdust or under the paper and the other end lit from a minimum distance of 7m from the trail. Retire to at least 300m or to a safe place.

Do not return to the site for at least 30 min after the burning has apparently finished.

If the fire goes out do not approach for at least 15 minutes after all traces of fire has gone. Do not add more diesel oil unless certain that the flame is completely extinguished.

14. TRANSPORT INFORMATION**DYNO**
Dyna Nobel

Groundbreaking Performance

Infosafe No. CV4SZ Issue Date: May 2007

ISSUED by DYNONOB

Product Name: ANFO PS

Transport Information This material is classified as a Class 1 (Explosive) Dangerous Good according to The Australian Code for the Transport of Dangerous Goods by Road and Rail. Dangerous goods of Class 1 (Explosive) are incompatible in a placard load with any of the following:

- Class 2.1, Flammable Gas
- Class 2.2, Non-flammable Non-toxic Gas
- Class 2.3, Toxic Gas
- Class 3, Flammable Liquid
- Class 4.1, Flammable Solid
- Class 4.2, Spontaneously Combustible Substance
- Class 4.3, Dangerous When Wet Substance
- Class 5.1, Oxidising Agent
- Class 5.2, Organic Peroxide
- Class 6, Toxic and Infectious Substances
- Class 7, Radioactive Substance
- Class 8, Corrosive
- Class 9 - Miscellaneous Dangerous Goods
- Fire risk substances

U.N. Number 0082

Proper Shipping Name EXPLOSIVE, BLASTING, TYPE B

DG Class 1.1D

Hazchem Code E

Packaging Method E8

Packing Group see 'Other information' (*)

EPG Number EXP1

IERG Number 02

Other Information (*) Unless specific provision to the contrary is made, the packagings used for explosives shall comply with at least the requirements for solids or liquids (as appropriate) of Packing Group II (medium danger). Further information related to packaging, IBCS and Unit loads for explosives can be obtained from Australian Explosives Code.

15. REGULATORY INFORMATION

Poisons Schedule Not Scheduled

Hazard Category Explosive

16. OTHER INFORMATION

Date of preparation or MSDS Reviewed and renamed as ANFO PS: May 2007

last revision of MSDS Supercedes MSDS: JULY 2002

DYNO
Dyno Nobel

Groundbreaking Performance

Infosafe No. CV4SZ Issue Date: May 2007

ISSUED by DYNONOB

Product Name: ANFO PS

Contact Person/Point Dyno Nobel Asia Pacific Limited
Mt Thorley Technical Centre
Telephone: +61 2 6574 2500
Fax: +61 2 65 74 6849

DISCLAIMER: The information and suggestions above concern explosive products which should only be dealt with by persons having appropriate technical skills, training and licences. The results depend to a large degree on the conditions under which the products are stored, transported and used.

While Dyno Nobel Asia Pacific makes every effort to ensure the details contained in the data sheet are as current and accurate as possible the conditions under which its products are used are not within Dyno Nobel Asia Pacific Limited's control. Each user is responsible for being aware of the details in the data sheet and the product applications in the specific context of the intended use. Buyers and users assume all risk, responsibility and liability arising from the use of this product and the information in this data sheet. Dyno Nobel Asia Pacific Limited is not responsible for damages of any nature resulting from the use of its products or reliance upon the information. Dyno Nobel Asia Pacific Limited makes no express or implied warranties other than those implied mandatory by Commonwealth, State or Territory legislation.

...End Of MSDS...

DYNO
Dyna Nobel

Groundbreaking Performance

AMERADA HESS CORPORATION

MATERIAL SAFETY DATA SHEET

Gasoline, All Grades

MSDS No. 9950

EMERGENCY OVERVIEW

DANGER!

**EXTREMELY FLAMMABLE - EYE AND MUCOUS MEMBRANE IRRITANT
- EFFECTS CENTRAL NERVOUS SYSTEM - HARMFUL OR FATAL IF
SWALLOWED - ASPIRATION HAZARD**



NFPA 704 (Section 16)

High fire hazard. Keep away from heat, spark, open flame, and other ignition sources.

If ingested, do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs). Contact may cause eye, skin and mucous membrane irritation. Harmful if absorbed through the skin. Avoid prolonged breathing of vapors or mists. Inhalation may cause irritation, anesthetic effects (dizziness, nausea, headache, intoxication), and respiratory system effects.

Long-term exposure may cause effects to specific organs, such as to the liver, kidneys, blood, nervous system, and skin. Contains benzene, which can cause blood disease, including anemia and leukemia.

1. CHEMICAL PRODUCT and COMPANY INFORMATION (rev. Jan-04)

Amerada Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

EMERGENCY TELEPHONE NUMBER (24 hrs):
COMPANY CONTACT (business hours):
MSDS Internet Website

CHEMTREC (800)424-9300
Corporate Safety (732)750-6000
www.hess.com/about/environ.html

SYNONYMS: Hess Conventional (Oxygenated and Non-oxygenated) Gasoline; Reformulated Gasoline (RFG); Reformulated Gasoline Blendstock for Oxygenate Blending (RBOB); Unleaded Motor or Automotive Gasoline

See Section 16 for abbreviations and acronyms.

2. COMPOSITION and INFORMATION ON INGREDIENTS * (rev. Jan-04)

INGREDIENT NAME (CAS No.)	CONCENTRATION PERCENT BY WEIGHT
Gasoline (86290-81-5)	100
Benzene (71-43-2)	0.1 - 4.9 (0.1 - 1.3 reformulated gasoline)
n-Butane (106-97-8)	< 10
Ethyl Alcohol (Ethanol) (64-17-5)	0 - 10
Ethyl benzene (100-41-4)	< 3
n-Hexane (110-54-3)	0.5 to 4
Methyl-tertiary butyl ether (MTBE) (1634-04-4)	0 to 15.0
Tertiary-amyl methyl ether (TAME) (994-05-8)	0 to 17.2
Toluene (108-88-3)	1 - 25
1,2,4- Trimethylbenzene (95-63-6)	< 6
Xylene, mixed isomers (1330-20-7)	1 - 15

A complex blend of petroleum-derived normal and branched-chain alkane, cycloalkane, alkene, and aromatic hydrocarbons. May contain antioxidant and multifunctional additives. Non-oxygenated Conventional Gasoline and RBOB do not have oxygenates (Ethanol or MTBE and/or TAME). Oxygenated Conventional and Reformulated Gasoline will have oxygenates for octane enhancement or as legally required.

AMERADA HESS CORPORATION

MATERIAL SAFETY DATA SHEET

Gasoline, All Grades

MSDS No. 9950

3. HAZARDS IDENTIFICATION (rev. Dec-97)

EYES

Moderate irritant. Contact with liquid or vapor may cause irritation.

SKIN

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are exposed repeatedly.

INGESTION

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

INHALATION

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

CHRONIC EFFECTS and CARCINOGENICITY

Contains benzene, a regulated human carcinogen. Benzene has the potential to cause anemia and other blood diseases, including leukemia, after repeated and prolonged exposure. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with systemic toxicity. See also Section 11 - Toxicological Information.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash). Chronic respiratory disease, liver or kidney dysfunction, or pre-existing central nervous system disorders may be aggravated by exposure.

4. FIRST AID MEASURES (rev. Dec-97)

EYES

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

SKIN

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser. Obtain medical attention if irritation or redness develops.

INGESTION

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

INHALATION

Remove person to fresh air. If person is not breathing, ensure an open airway and provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

AMERADA HESS CORPORATION

MATERIAL SAFETY DATA SHEET

Gasoline, All Grades

MSDS No. 9950

5. FIRE FIGHTING MEASURES (rev. Dec-97)

FLAMMABLE PROPERTIES:

FLASH POINT: -45 °F (-43°C)
AUTOIGNITION TEMPERATURE: highly variable; > 530 °F (>280 °C)
OSHA/NFPA FLAMMABILITY CLASS: 1A (flammable liquid)
LOWER EXPLOSIVE LIMIT (%): 1.4%
UPPER EXPLOSIVE LIMIT (%): 7.6%

FIRE AND EXPLOSION HAZARDS

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. Flowing product may be ignited by self-generated static electricity. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

EXTINGUISHING MEDIA

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, fire fighting foam, or Halon.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

During certain times of the year and/or in certain geographical locations, gasoline may contain MTBE and/or TAME. Firefighting foam suitable for polar solvents is recommended for fuel with greater than 10% oxygenate concentration - refer to NFPA 11 "Low Expansion Foam - 1994 Edition."

FIRE FIGHTING INSTRUCTIONS

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

See Section 16 for the NFPA 704 Hazard Rating.

6. ACCIDENTAL RELEASE MEASURES (rev. Dec-97)

ACTIVATE FACILITY SPILL CONTINGENCY or EMERGENCY PLAN.

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product

AMERADA HESS CORPORATION

MATERIAL SAFETY DATA SHEET

Gasoline, All Grades

MSDS No. 9950

vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal - caution, flammable vapors may accumulate in closed containers. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

7. HANDLING and STORAGE (rev. Dec-97)

HANDLING PRECAUTIONS

*****USE ONLY AS A MOTOR FUEL*****

*****DO NOT SIPHON BY MOUTH*****

Handle as a flammable liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents.

STORAGE PRECAUTIONS

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks in Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

WORK/HYGIENIC PRACTICES

Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

8. EXPOSURE CONTROLS and PERSONAL PROTECTION (rev. Jan-04)

EXPOSURE LIMITS

Component (CAS No.)	Source	TWA (ppm)	STEL (ppm)	Exposure Limits	Note
Gasoline (86290-81-5)	ACGIH	300	500	A3	
Benzene (71-43-2)	OSHA	1	5	Carcinogen	
	ACGIH	0.5	2.5	A1, skin	
	USCG	1	5		
n-Butane (106-97-8)	ACGIH	800	--	2003 NOIC: 1000 ppm (TWA) Aliphatic Hydrocarbon Gases Alkane (C1-C4)	
Ethyl Alcohol (ethanol) (64-17-5)	OSHA	1000	--		
	ACGIH	1000	--	A4	
Ethyl benzene (100-41-4)	OSHA	100	--		
	ACGIH	100	125	A3	

AMERADA HESS CORPORATION

MATERIAL SAFETY DATA SHEET

Gasoline, All Grades

MSDS No. 9950

Component (CAS No.)	Source	TWA (ppm)	STEL (ppm)	Exposure Limits	Note
n-Hexane (110-54-3)	OSHA	500	--		
	ACGIH	50	--	skin	
Methyl-tertiary butyl ether [MTBE] (1634-04-4)	ACGIH	50		A3	
Tertiary-amyl methyl ether [TAME] (994-05-8)				None established	
Toluene (108-88-3)	OSHA	200		Ceiling: 300 ppm; Peak: 500 ppm (10 min.)	
	ACGIH	50	--	A4 (skin)	
1,2,4-Trimethylbenzene (95-83-6)	ACGIH	25	--		
Xylene, mixed isomers (1330-20-7)	OSHA	100	--		
	ACGIH	100	150	A4	

ENGINEERING CONTROLS

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

EYE/FACE PROTECTION

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

SKIN PROTECTION

Gloves constructed of nitrile or neoprene are recommended. Chemical protective clothing such as that made of of E.I. DuPont Tychem®, products or equivalent is recommended based on degree of exposure.

Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

RESPIRATORY PROTECTION

A NIOSH-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection and limitations.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

9. PHYSICAL and CHEMICAL PROPERTIES (rev. Jan-04)

APPEARANCE

A translucent, straw-colored or light yellow liquid

ODOR

A strong, characteristic aromatic hydrocarbon odor. Oxygenated gasoline with MTBE and/or TAME may have a sweet, ether-like odor and is detectable at a lower concentration than non-oxygenated gasoline.

ODOR THRESHOLD

	<u>Odor Detection</u>	<u>Odor Recognition</u>
Non-oxygenated gasoline:	0.5 - 0.6 ppm	0.8 - 1.1 ppm
Gasoline with 15% MTBE:	0.2 - 0.3 ppm	0.4 - 0.7 ppm
Gasoline with 15% TAME:	0.1 ppm	0.2 ppm

BASIC PHYSICAL PROPERTIES

BOILING RANGE:	85 to 437 °F (39 to 200 °C)
VAPOR PRESSURE:	6.4 - 15 RVP @ 100°F (38°C) (275-475 mm Hg @ 68°F (20 °C)
VAPOR DENSITY (air = 1):	AP 3 to 4
SPECIFIC GRAVITY (H ₂ O = 1):	0.70 - 0.78
EVAPORATION RATE:	10-11 (n-butyl acetate = 1)
PERCENT VOLATILES:	100 %

AMERADA HESS CORPORATION

MATERIAL SAFETY DATA SHEET

Gasoline, All Grades

MSDS No. 9950

SOLUBILITY (H₂O):

Non-oxygenated gasoline - negligible (< 0.1% @ 77 °F). Gasoline with 15% MTBE - slight (0.1 - 3% @ 77 °F); ethanol is readily soluble in water

10. STABILITY and REACTIVITY (rev. Dec-94)

STABILITY: Stable. Hazardous polymerization will not occur.

CONDITIONS TO AVOID

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources

INCOMPATIBLE MATERIALS

Keep away from strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.

11. TOXICOLOGICAL PROPERTIES (rev. Dec-97)

ACUTE TOXICITY

Acute Dermal LD50 (rabbits): > 5 ml/kg

Acute Oral LD50 (rat): 18.75 ml/kg

Primary dermal irritation (rabbits): slightly irritating

Draize eye irritation (rabbits): non-irritating

Guinea pig sensitization: negative

CHRONIC EFFECTS AND CARCINOGENICITY

Carcinogenicity: OSHA: NO IARC: YES - 2B

NTP: NO ACGIH: YES (A3)

IARC has determined that gasoline and gasoline exhaust are possibly carcinogenic in humans. Inhalation exposure to completely vaporized unleaded gasoline caused kidney cancers in male rats and liver tumors in female mice. The U.S. EPA has determined that the male kidney tumors are species-specific and are irrelevant for human health risk assessment. The significance of the tumors seen in female mice is not known. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with effects to the central and peripheral nervous systems, liver, and kidneys. The significance of these animal models to predict similar human response to gasoline is uncertain.

This product contains benzene. Human health studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-forming system (particularly bone marrow), and serious blood disorders such as aplastic anemia and leukemia. Benzene is listed as a human carcinogen by the NTP, IARC, OSHA and ACGIH.

This product may contain methyl tertiary butyl ether (MTBE): animal and human health effects studies indicate that MTBE may cause eye, skin, and respiratory tract irritation, central nervous system depression and neurotoxicity. MTBE is classified as an animal carcinogen (A3) by the ACGIH.

12. ECOLOGICAL INFORMATION (rev. Jan-04)

Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations. If released, oxygenates such as ethers and alcohols will be expected to exhibit fairly high mobility in soil, and therefore may leach into groundwater. The API (www.api.org) provides a number of useful references addressing petroleum and oxygenate contamination of groundwater.

13. DISPOSAL CONSIDERATIONS (rev. Dec-97)

Consult federal, state and local waste regulations to determine appropriate disposal options.

AMERADA HESS CORPORATION

MATERIAL SAFETY DATA SHEET

Gasoline, All Grades

MSDS No. 9950

14. TRANSPORTATION INFORMATION (rev. Jan-04)

DOT PROPER SHIPPING NAME: Gasoline
DOT HAZARD CLASS and PACKING GROUP: 3, PG II
DOT IDENTIFICATION NUMBER: UN 1203
DOT SHIPPING LABEL: FLAMMABLE LIQUID

PLACARD:



15. REGULATORY INFORMATION (rev. Jan-04)

U.S. FEDERAL, STATE, and LOCAL REGULATORY INFORMATION

This product and its constituents listed herein are on the EPA TSCA Inventory. Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other federal, state, or local regulations; consult those regulations applicable to your facility/operation.

CLEAN WATER ACT (OIL SPILLS)

Any spill or release of this product to "navigable waters" (essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) or, if not practical, the U.S. Coast Guard with follow-up to the National Response Center, as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil, refined, and unrefined petroleum products and any indigenous components of such. However, other federal reporting requirements (e.g., SARA Section 304 as well as the Clean Water Act if the spill occurs on navigable waters) may still apply.

SARA SECTION 311/312 - HAZARD CLASSES

<u>ACUTE HEALTH</u>	<u>CHRONIC HEALTH</u>	<u>FIRE</u>	<u>SUDDEN RELEASE OF PRESSURE</u>	<u>REACTIVE</u>
X	X	X	--	--

SARA SECTION 313 - SUPPLIER NOTIFICATION

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

<u>INGREDIENT NAME (CAS NUMBER)</u>	<u>CONCENTRATION WT. PERCENT</u>
Benzene (71-43-2)	0.1 to 4.9 (0.1 to 1.3 for reformulated gasoline)
Ethyl benzene (100-41-4)	< 3
n-Hexane (110-54-3)	0.5 to 4
Methyl-tertiary butyl ether (MTBE) (1634-04-4)	0 to 15.0
Toluene (108-88-3)	1 to 15
1,2,4- Trimethylbenzene (95-63-6)	< 8
Xylene, mixed isomers (1330-20-7)	1 to 15

US EPA guidance documents (www.epa.gov/tri) for reporting Persistent Bioaccumulating Toxics (PBTs) indicate this product may contain the following deminimis levels of toxic chemicals subject to Section 313 reporting:

<u>INGREDIENT NAME (CAS NUMBER)</u>	<u>CONCENTRATION - Parts per million (ppm) by weight</u>
Polycyclic aromatic compounds (PACs)	17
Benzo (g,h,i) perylene (191-24-2)	2.55
Lead (7439-92-1)	0.079

AMERADA HESS CORPORATION

MATERIAL SAFETY DATA SHEET

Gasoline, All Grades

MSDS No. 9950

CANADIAN REGULATORY INFORMATION (WHMIS)

Class B, Division 2 (Flammable Liquid)

Class D, Division 2A (Very toxic by other means) and Class D, Division 2B (Toxic by other means)

16. OTHER INFORMATION (rev. Jan-04)

NFPA® HAZARD RATING

HEALTH:	1	Slight
FIRE:	3	Serious
REACTIVITY:	0	Minimal

HMIS® HAZARD RATING

HEALTH:	1*	Slight
FIRE:	3	Serious
REACTIVITY:	0	Minimal

* CHRONIC

SUPERSEDES MSDS DATED: 12/30/97

ABBREVIATIONS:

AP = Approximately < = Less than > = Greater than
N/A = Not Applicable N/D = Not Determined ppm = parts per million

ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
AIHA	American Industrial Hygiene Association	OPA	Oil Pollution Act of 1990
ANSI	American National Standards Institute (212)642-4900	OSHA	U.S. Occupational Safety & Health Administration
API	American Petroleum Institute (202)682-8000	PEL	Permissible Exposure Limit (OSHA)
CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act	RCRA	Resource Conservation and Recovery Act
DOT	U.S. Department of Transportation [General Info: (800)467-4922]	REL	Recommended Exposure Limit (NIOSH)
EPA	U.S. Environmental Protection Agency	SARA	Superfund Amendments and Reauthorization Act of 1986 Title III
HMIS	Hazardous Materials Information System	SCBA	Self-Contained Breathing Apparatus
IARC	International Agency For Research On Cancer	SPCC	Spill Prevention, Control, and Countermeasures
MSHA	Mine Safety and Health Administration	STEL	Short-Term Exposure Limit (generally 15 minutes)
NFPA	National Fire Protection Association (617)770-3000	TLV	Threshold Limit Value (ACGIH)
NIOSH	National Institute of Occupational Safety and Health	TSCA	Toxic Substances Control Act
NOIC	Notice of Intended Change (proposed change to ACGIH TLV)	TWA	Time Weighted Average (8 hr.)
		WEEL	Workplace Environmental Exposure Level (AIHA)
		WHMIS	Workplace Hazardous Materials Information System (Canada)

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

MSDS SUMMARY SHEET

Manufacturer:

Name: PHILLIPS PETROLEUM COMPANY

Address 1:

Address 2:

Address 3:

CSZ: BARTLESVILLE State: OK **Zipcode:** 74004

Emergency phone: (800) 424-9300

Business phone: 800-762-0942

Product:

Ferndale MSDS#: 1354 **Version # :** 6

Manufacturer MSDS#: 0041

Current? : 2002

Name:

NO. 2 DIESEL FUEL

Synonyms:

CARB Diesel TF3

CARB Diesel

CARB Diesel 10%

Diesel Fuel Oil

EPA Low Sulfur Diesel Fuel

EPA Low Sulfur Diesel Fuel – Dyed

EPA Off Road High Sulfur Diesel – Dyed

Fuel Oil No. 2 – CAS # 68476-30-2

No. 2 Diesel Fuel Oil

No. 2 Fuel Oil – Non Hiway – Dyed

No. 2 High Sulfur Diesel – Dyed

No. 2 Low Sulfur Diesel - Dyed

No. 2 Low Sulfur Diesel - Undyed

Crude column 3rd IR

Crude column 3rd side cut

Atmospheric tower 3rd side cut

Ultra Low Sulfur Diesel No. 2

Finished Diesel

DHT Reactor Feed

Straight Run Diesel

Diesel

Middle Distillate

Product/Catalog Numbers:

MSDS Date: 01/01/2002 (received: 01/14/2002)

NFPA codes:

Health: 0 **Flammability:** 2 **Reactivity:** 0

**MATERIAL SAFETY DATA SHEET
No. 2 Diesel Fuel**

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: No. 2 Diesel Fuel
Product Code: Multiple
SAP Code:
Synonyms: 1354
CARB Diesel TF3
CARB Diesel
CARB Diesel 10%
Diesel Fuel Oil
EPA Low Sulfur Diesel Fuel
EPA Low Sulfur Diesel Fuel - Dyed
EPA Off Road High Sulfur Diesel - Dyed
Fuel Oil No. 2 - CAS # 68476-30-2
No. 2 Diesel Fuel Oil
No. 2 Fuel Oil - Non Hiway - Dyed
No. 2 High Sulfur Diesel - Dyed
No. 2 Low Sulfur Diesel - Dyed
No. 2 Low Sulfur Diesel - Undyed
No. 2 Ultra Low Sulfur Diesel - Dyed
No. 2 Ultra Low Sulfur Diesel - Undyed
Fuel

Intended Use:
Chemical Family:
Responsible Party: Phillip's Petroleum Company
Bartlesville, Oklahoma 74004

For Additional MSDSs: 800-762-0942
Technical Information:

The intended use of this product is indicated above. If any additional use is known, please contact us at the Technical Information number listed.

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident
Call CHEMTREC

California Poison Control System: 800-356-3120

North America: (800) 424-9300
Others: (703) 527-3887 (collect)

Health Hazards/Precautionary Measures: Causes severe skin irritation. Aspiration hazard if swallowed. Can enter lungs and cause damage. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards/Precautionary Measures: Flammable liquid and vapor. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

Appearance: Straw-colored to dyed red
Physical Form: Liquid
Odor: Characteristic petroleum

HFGA Hazard Class:
 Health: 0 (Least)
 Flammability: 2 (Moderate)
 Reactivity: 0 (Least)

HMIS Hazard Class
 Not Evaluated

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>HAZARDOUS COMPONENTS</u>	<u>% VOLUME</u>	<u>Limits</u>	<u>EXPOSURE GUIDELINE</u>	
			<u>Agency</u>	<u>Type</u>
Diesel Fuel No. 2 CAS# 68476-34-6	100	100* mg/m3	ACGIH	TWA-SKIN
Naphthalene CAS# 91-20-3	<1	10ppm	ACGIH	TWA
		15ppm	ACGIH	STEL
		10ppm	OSHA	TWA
		250ppm	NIOSH	IDLH

All components are listed on the TSCA inventory

Tosco Low Sulfur No. 2 Diesel meets the specifications of 40 CFR 60.41 for low sulfur diesel fuel.

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

*Proposed ACGIH (1999)

3. HAZARDS IDENTIFICATION

Potential Health Effects:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Severe skin irritant. Contact may cause redness, itching, burning, and severe skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis (inflammation). Not actually toxic by skin absorption, but prolonged or repeated skin contact may be harmful (see Section 11).

Inhalation (Breathing): No information available. Studies by other exposure routes suggest a low degree of toxicity by inhalation.

Ingestion (Swallowing): Low degree of toxicity by ingestion. **ASPIRATION HAZARD** – This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract, nausea, diarrhea and transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

Cancer: Possible skin cancer hazard (see Sections 11 and 14).

Target Organs: There is limited evidence from animal studies that overexposure may cause injury to the kidney (see Section 11).

Developmental: Inadequate data available for this material.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and kidney disorders.

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Immediately remove contaminated shoes, clothing, and constrictive jewelry and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek immediate medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek immediate medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard; Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

5. FIRE FIGHTING MEASURES

Flammable Properties:

Flash Point: >125°F/>52°

OSHA Flammability Class: Combustible liquid

LEL %: 0.3 / UEL %: 10.0

Autoignition Temperature: 500°F/260°C

Unusual Fire & Explosion Hazards: This material is flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharged. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing or high pressure hydraulic oil equipment.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSIZ49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentration below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: A NIOSH certified air purifying respirator with an organic vapor cartridge maybe used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2).

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is a potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrants a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, apron and/or arm covers may be necessary.

Eyes/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse. It is recommended that impervious clothing be worn when skin contact is possible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1atm).

Appearance: Straw-colored to dyed red

Physical State: Liquid

Odor: Characteristic petroleum

pH: unavailable

Vapor Pressure (mm Hg): 0.40

Vapor Density (air=1): >3

Boiling Point/Range: 320-700°F / 160-371°C

Freezing/Melting Point: No Data

Solubility in Water: Negligible

Specific Gravity: 0.81-0.88 @ 60°F

Percent Volatile: Negligible

Evaporation Rate (nBuAc=1): <1

Viscosity: 32.6-40.0 SUS @ 100°F

Bulk Density: 7.08 lbs/gal

Flash Point: >125°F / >52°C

Flammable/Explosive Limits (%): LEL: 0.3 / UEL: 10.0

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc.

Hazardous Decomposition Products: The use of hydrocarbon fuels in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels. ACGIH has included a TLV of 0.05 mg/m³ TWA for diesel exhaust particulate on its 1999 Notice of Intended Changes. See Section 11 for additional information on hazards of engine exhaust.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Diesel Fuel No. 2 (CAS# 68476-34-6)

Carcinogenicity: Chronic dermal application of certain middle distillate streams contained in diesel fuel No. 2 resulted in an increased incidence of skin tumors in mice. This material has not been identified as carcinogen by NTP, IARC, or OSHA. Diesel exhaust is a probable cancer hazard based on tests with laboratory animals.

Target Organ(s): Limited evidence of renal impairment has been noted from a few case reports involving excessive exposure to diesel fuel No. 2.

Naphthalene (CAS# 91-20-3)

Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has not been identified as a carcinogen by IARC or OSHA.

12. ECOLOGICAL INFORMATION

Not evaluated at this time

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001) and benzene (D018). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container ^{insate?} could be considered a RCRA hazardous waste and must be disposed of with care and in compliance with federal, state and local regulations. Large empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller containers, consult with state and local regulations and disposal authorities.

14. TRANSPORT INFORMATION

DOT Shipping Description: Diesel Fuel, NA1983
Non-Bulk Package Marking: Diesel Fuel, 3, NA 1993, III

15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories):

Acute Health: Yes
Chronic Health: Yes
Fire Hazard: Yes
Pressure Hazard: No
Reactive Hazard: No

SARA 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

Component	CAS Number	Weight %
-----------	------------	----------

-- None known --

California Proposition 65:

Warning: This material contains the following chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Effect
Benzene	Cancer, Developmental and Reproductive Toxicant
Toluene	Developmental Toxicant

Diesel engine exhaust, while not a component of this material, is on the Proposition 65 list of chemicals known to the State of California to cause cancer.

Carcinogen Identification:

This material has not been identified as a carcinogen by NTP, IARC, or OSHA. See Section 11 for carcinogenicity information of individual components, if any. Diesel exhaust is a probable cancer hazard based on tests in laboratory animals. It has been identified as carcinogen by IARC.

EPA (CERCLA Reportable Quantity): None

16. OTHER INFORMATION

Issue Date: 01/01/02
Previous Issue Date: 05/15/01
Product Code: Multiple
Revised Sections: None
Previous Product Code: Multiple
MSDS Number: 0041

Disclaimer of Expressed and Implied Warranties:

The information presented in this Material Data Safety Sheet is based on data believed to be accurate as of the date this Material Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THE PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

Tosco Refining Company

Ferndale Refinery

UltraLow Sulfur Diesel Product Specification

Ferndale Product Code:34380xx (5) Product Code: ULSD2

(COMETS)

Specification	Unit	Limit	Test Procedure	Typical
Appearance				
Water & Sediment	Vol %	0.05 Max	D 2709	
Color	Number	3.0 Max	D 1500	
Haze Rating	Rating	2 Max	D 4176	
Composition				
Carbon Residue (Ramsbottom)	Wt %	0.35 Max	D 524, D 189	
Volatility				
90% Recovered	Deg; F	540 Min	D 86	
	Deg; F	640 Min	D 86	
Flash Point	Deg; F	125 Min (1)	D 93	130 F
Gravity	API	30 Min	D 287, D4052	
Fluidity				
Pour Point	Deg; F	See Season Table (6)	D 97	
Cloud Point	Deg; F	See Season Table (6)	D 2500	10 F
Viscosity @ 104F	cSt	1.9 Min	D 445	
	cSt	4.1 Max	D 445	
Lubricity, SLBOCLE	grams	3100 Min	D 6078	3300gm
Lubricity, HFRR	mm	.45	D 6079	
Combustion				
Cetane Index or Cetane Number (3,4)	Number	40.0 Min	D 976, D613	47.0
Corrosion				
Copper Strip, 3hr @ 50 deg C	Number	3 Max (2)	D 130	
Aromatics (4)	Vol %	35 Max	D 1319	25 %
Contaminants				
Total Sulfur	PPM	30 Max	D 2622, D4294	15-20ppm
Water & Sediment	Vol %	0.05 Max	D 1796	
Ash	Wt %	0.01 Max	D 482	
Additives				
Cetane Improver	Lb/MBbl	675 Max		
Dye		Undyed		

1. Minimum release specification is 125 deg. F. The refinery should target 135 deg. F.
2. Test result reported as a number and letter (e.g. 1a). Any letter is allowable as long as the number meets the spec shown.
3. Either specification must be met.
4. Either cetane index minimum or aromatics maximum must be met.
5. Winter cloud and pour specifications may be relaxed to the summer specifications by agreement with the customer.
6. Season Table

Month	Product Code	Pour Point	Cloud Point
Jan, Feb, Nov, Dec	WI	0 max (5)	14 max (5)
Mar - Oct	SU	15 max	24 max

Material Safety Data Sheet

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron Rykon® Premium Oil

Product Use: Hydraulic Oil

Product Number(s): CPS232950, CPS232952, CPS255678, CPS255679

Synonyms: Chevron Rykon® Premium Oil ISO 100, Chevron Rykon® Premium Oil ISO 32, Chevron Rykon® Premium Oil ISO 46, Chevron Rykon® Premium Oil ISO 68

Company Identification

ChevronTexaco Global Lubricants

6001 Bollinger Canyon Rd.

San Ramon, CA 94583

United States of America

www.chevron-lubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

ChevronTexaco Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevrontexaco.com

Product Information: (800) LUBE TEK

MSDS Requests: (800) 414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	80 - 100 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin.

High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

REGULATORY CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 144 °C (291 °F) (Min)

Autoignition: No Data Available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or ground-water. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

**Occupational Exposure Limits:
Component**

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil	(C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	—
Highly refined mineral oil	(C15 - C50)	OSHA Z-1	5 mg/m3	—	—

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless to yellow

Physical State: Liquid

Odor: Petroleum odor

H: Not Applicable

Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)

Vapor Density (Air = 1): >1

Boiling Point: >260°C (500°F)

Solubility: Soluble in hydrocarbons; insoluble in water

Freezing Point: Not Applicable

Specific Gravity: 0.86 - 0.87 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)

Viscosity: 13.5 cSt @ 40°C (104°F) (Min)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: No product toxicology data available.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water.

ENVIRONMENTAL FATE

This material is not expected to be readily biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL

IMO/MDG Shipping Description: PETROLEUM LUBRICATING OIL

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: NO

Delayed (Chronic) Health Effects: NO

Fire Hazard: NO

4. Sudden Release of Pressure Hazard: NO

5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1
01-2A=IARC Group 2A
01-2B=IARC Group 2B
02=NTP Carcinogen

03=EPCRA 313
04=CA Proposition 65
05=MA RTK
06=NJ RTK
07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Hydraulic oil)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : INDUSTRIAL OIL 1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1-16

Revision Date: 09/14/2004

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value TWA - Time Weighted Average
TEL - Short-term Exposure Limit PEL - Permissible Exposure Limit
CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists IMO/MDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute MSDS - Material Safety Data Sheet
CVX - ChevronTexaco NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA) NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

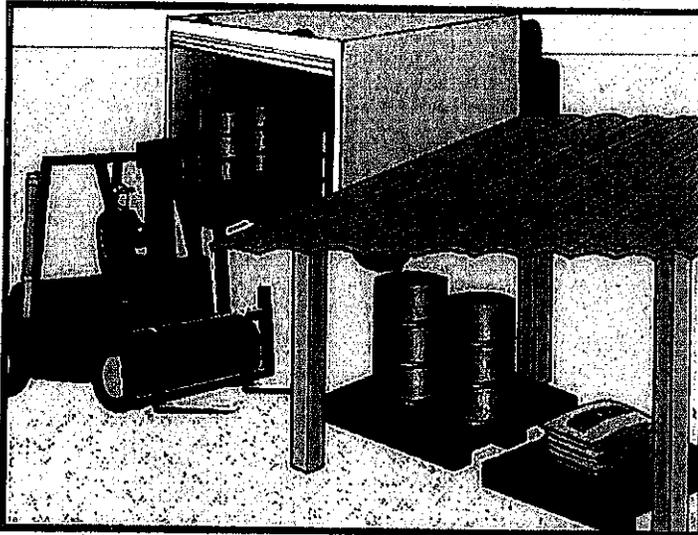
The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

ATTACHMENT 2

CONSTRUCTION SITE BEST MANAGEMENT PRACTICES

Material Delivery and Storage

WM-1



Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- Primary Objective
- Secondary Objective

Description and Purpose

Prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials onsite, storing materials in a designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.

This best management practice covers only material delivery and storage. For other information on materials, see WM-2, Material Use, or WM-4, Spill Prevention and Control. For information on wastes, see the waste management BMPs in this section.

Suitable Applications

These procedures are suitable for use at all construction sites with delivery and storage of the following materials:

- Soil stabilizers and binders
- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster
- Petroleum products such as fuel, oil, and grease
- Asphalt and concrete components

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None



WM-1

Material Delivery and Storage

- Hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

Limitations

- Space limitation may preclude indoor storage.
- Storage sheds often must meet building and fire code requirements.

Implementation

The following steps should be taken to minimize risk:

- Temporary storage area should be located away from vehicular traffic.
- Material Safety Data Sheets (MSDS) should be supplied for all materials stored.
- Construction site areas should be designated for material delivery and storage.
- Material delivery and storage areas should be located near the construction entrances, away from waterways, if possible.
 - Avoid transport near drainage paths or waterways.
 - Surround with earth berms. See EC-9, Earth Dikes and Drainage Swales.
 - Place in an area which will be paved.
- Storage of reactive, ignitable, or flammable liquids must comply with the fire codes of your area. Contact the local Fire Marshal to review site materials, quantities, and proposed storage area to determine specific requirements. See the Flammable and Combustible Liquid Code, NFPA30.
- An up to date inventory of materials delivered and stored onsite should be kept.
- Hazardous materials storage onsite should be minimized.
- Hazardous materials should be handled as infrequently as possible.
- During the rainy season, consider storing materials in a covered area. Store materials in secondary containments such as earthen dike, horse trough, or even a children's wading pool for non-reactive materials such as detergents, oil, grease, and paints. Small amounts of material may be secondarily contained in "bus boy" trays or concrete mixing trays.
- Do not store chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and, when possible, in secondary containment.

Material Delivery and Storage

WM-1

- If drums must be kept uncovered, store them at a slight angle to reduce ponding of rainwater on the lids to reduce corrosion. Domed plastic covers are inexpensive and snap to the top of drums, preventing water from collecting.
- Chemicals should be kept in their original labeled containers.
- Employees and subcontractors should be trained on the proper material delivery and storage practices.
- Employees trained in emergency spill cleanup procedures must be present when dangerous materials or liquid chemicals are unloaded.
- If significant residual materials remain on the ground after construction is complete, properly remove materials and any contaminated soil. See WM-7, Contaminated Soil Management. If the area is to be paved, pave as soon as materials are removed to stabilize the soil.

Material Storage Areas and Practices

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 should be stored in approved containers and drums and should not be overfilled. Containers and drums should be placed in temporary containment facilities for storage.
- A temporary containment facility should provide for a spill containment volume able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest container within its boundary, whichever is greater.
- A temporary containment facility should be impervious to the materials stored therein for a minimum contact time of 72 hours.
- A temporary containment facility should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be collected and placed into drums. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. All collected liquids or non-hazardous liquids should be sent to an approved disposal site.
- Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.
- Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.
- Throughout the rainy season, each temporary containment facility should be covered during non-working days, prior to, and during rain events.
- Materials should be stored in their original containers and the original product labels should be maintained in place in a legible condition. Damaged or otherwise illegible labels should be replaced immediately.

WM-1

Material Delivery and Storage

- Bagged and boxed materials should be stored on pallets and should not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the rainy season, bagged and boxed materials should be covered during non-working days and prior to and during rain events.
- Stockpiles should be protected in accordance with WM-3, Stockpile Management.
- Materials should be stored indoors within existing structures or sheds when available.
- Proper storage instructions should be posted at all times in an open and conspicuous location.
- An ample supply of appropriate spill clean up material should be kept near storage areas.
- Also see WM-6, Hazardous Waste Management, for storing of hazardous materials.

Material Delivery Practices

- Keep an accurate, up-to-date inventory of material delivered and stored onsite.
- Arrange for employees trained in emergency spill cleanup procedures to be present when dangerous materials or liquid chemicals are unloaded.

Spill Cleanup

- Contain and clean up any spill immediately.
- Properly remove and dispose of any hazardous materials or contaminated soil if significant residual materials remain on the ground after construction is complete. See WM-7, Contaminated Soil Management.
- See WM-4, Spill Prevention and Control, for spills of chemicals and/or hazardous materials.

Cost

- The largest cost of implementation may be in the construction of a materials storage area that is covered and provides secondary containment.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Keep an ample supply of spill cleanup materials near the storage area.
- Keep storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored.
- Repair or replace perimeter controls, containment structures, covers, and liners as needed to maintain proper function.

Material Delivery and Storage

WM-1

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

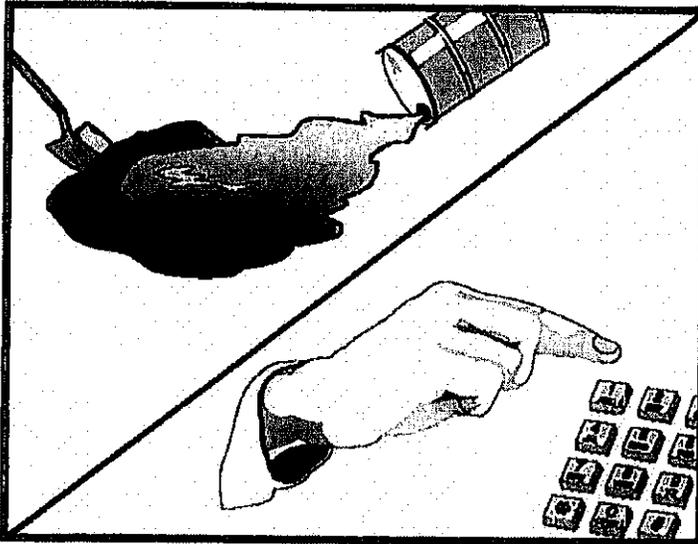
Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005, USEPA, April 1992.



Spill Prevention and Control

WM-4



Description and Purpose

Prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

This best management practice covers only spill prevention and control. However, WM-1, Materials Delivery and Storage, and WM-2, Material Use, also contain useful information, particularly on spill prevention. For information on wastes, see the waste management BMPs in this section.

Suitable Applications

This BMP is suitable for all construction projects. Spill control procedures are implemented anytime chemicals or hazardous substances are stored on the construction site, including the following materials:

- Soil stabilizers/binders
- Dust palliatives
- Herbicides
- Growth inhibitors
- Fertilizers
- Deicing/anti-icing chemicals

Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- Primary Objective
- Secondary Objective

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None



- Fuels
- Lubricants
- Other petroleum distillates

Limitations

- In some cases it may be necessary to use a private spill cleanup company.
- This BMP applies to spills caused by the contractor and subcontractors.
- Procedures and practices presented in this BMP are general. Contractor should identify appropriate practices for the specific materials used or stored onsite

Implementation

The following steps will help reduce the stormwater impacts of leaks and spills:

Education

- Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.
- Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

- To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110, 117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- Store hazardous materials and wastes in covered containers and protect from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals to oversee and enforce control measures.
- Spills should be covered and protected from stormwater runoff during rainfall to the extent that it doesn't compromise clean up activities.
- Do not bury or wash spills with water.

Spill Prevention and Control

WM-4

- Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with WM-10, Liquid Waste Management.
- Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- Place proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

- Clean up leaks and spills immediately.
- Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

- Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
- Use absorbent materials on small spills rather than hosing down or burying the spill.
- Absorbent materials should be promptly removed and disposed of properly.
- Follow the practice below for a minor spill:
 - Contain the spread of the spill.
 - Recover spilled materials.
 - Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

- Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

- Spills should be cleaned up immediately:
 - Contain spread of the spill.
 - Notify the project foreman immediately.
 - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
 - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
 - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

- For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps should be taken:
 - Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
 - Notify the Governor's Office of Emergency Services Warning Center, (916) 845-8911.
 - For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
 - Notification should first be made by telephone and followed up with a written report.
 - The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
 - Other agencies which may need to be consulted include, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, Cal/OSHA, etc.

Reporting

- Report significant spills to local agencies, such as the Fire Department, they can assist in cleanup.
- Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hours).

Use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.
- Regularly inspect onsite vehicles and equipment for leaks and repair immediately
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Place drip pans or absorbent materials under paving equipment when not in use.
- Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around
- Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- If fueling must occur onsite, use designate areas, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.
- Discourage "topping off" of fuel tanks.
- Always use secondary containment, such as a drain pan, when fueling to catch spills/leaks.

Costs

Prevention of leaks and spills is inexpensive. Treatment and/ or disposal of contaminated soil or water can be quite expensive.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.

Spill Prevention and Control

WM-4

- Keep ample supplies of spill control and cleanup materials onsite, near storage, unloading, and maintenance areas.
- Update your spill prevention and control plan and stock cleanup materials as changes occur in the types of chemicals onsite.

References

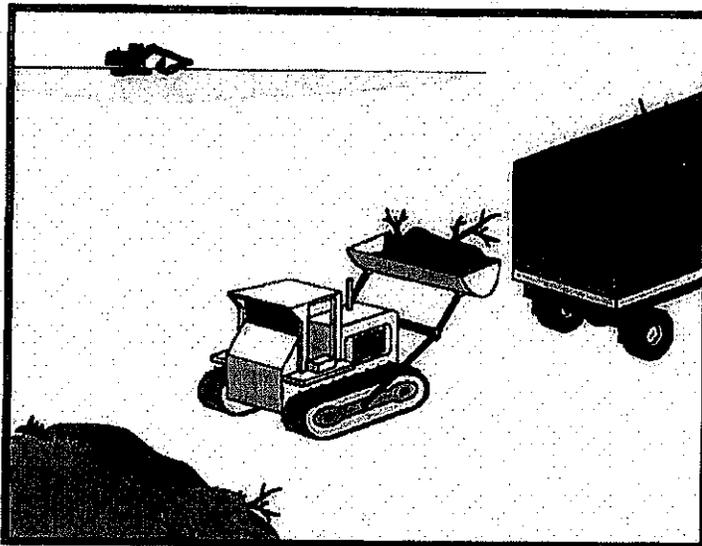
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005, USEPA, April 1992.

Solid Waste Management

WM-5



Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- Primary Objective
- Secondary Objective

Description and Purpose

Solid waste management procedures and practices are designed to prevent or reduce the discharge of pollutants to stormwater from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.

Suitable Applications

This BMP is suitable for construction sites where the following wastes are generated or stored:

- Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures (rubble), and building construction
- Packaging materials including wood, paper, and plastic
- Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces and masonry products
- Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes
- Construction wastes including brick, mortar, timber, steel and metal scraps, pipe and electrical cuttings, non-hazardous equipment parts, styrofoam and other materials used to transport and package construction materials

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None



- Highway planting wastes, including vegetative material, plant containers, and packaging materials

Limitations

Temporary stockpiling of certain construction wastes may not necessitate stringent drainage related controls during the non-rainy season or in desert areas with low rainfall.

Implementation

The following steps will help keep a clean site and reduce stormwater pollution:

- Select designated waste collection areas onsite.
- Inform trash-hauling contractors that you will accept only watertight dumpsters for onsite use. Inspect dumpsters for leaks and repair any dumpster that is not watertight.
- Locate containers in a covered area or in a secondary containment.
- Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it is windy.
- Plan for additional containers and more frequent pickup during the demolition phase of construction.
- Collect site trash daily, especially during rainy and windy conditions.
- Remove this solid waste promptly since erosion and sediment control devices tend to collect litter.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Do not hose out dumpsters on the construction site. Leave dumpster cleaning to the trash hauling contractor.
- Arrange for regular waste collection before containers overflow.
- Clean up immediately if a container does spill.
- Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas.

Education

- Have the contractor's superintendent or representative oversee and enforce proper solid waste management procedures and practices.
- Instruct employees and subcontractors on identification of solid waste and hazardous waste.
- Educate employees and subcontractors on solid waste storage and disposal procedures.

Solid Waste Management

WM-5

- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Require that employees and subcontractors follow solid waste handling and storage procedures.
- Prohibit littering by employees, subcontractors, and visitors.
- Minimize production of solid waste materials wherever possible.

Collection, Storage, and Disposal

- Littering on the project site should be prohibited.
- To prevent clogging of the storm drainage system, litter and debris removal from drainage grates, trash racks, and ditch lines should be a priority.
- Trash receptacles should be provided in the contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods.
- Litter from work areas within the construction limits of the project site should be collected and placed in watertight dumpsters at least weekly, regardless of whether the litter was generated by the contractor, the public, or others. Collected litter and debris should not be placed in or next to drain inlets, stormwater drainage systems, or watercourses.
- Dumpsters of sufficient size and number should be provided to contain the solid waste generated by the project.
- Full dumpsters should be removed from the project site and the contents should be disposed of by the trash hauling contractor.
- Construction debris and waste should be removed from the site biweekly or more frequently as needed.
- Construction material visible to the public should be stored or stacked in an orderly manner.
- Stormwater runoff should be prevented from contacting stored solid waste through the use of berms, dikes, or other temporary diversion structures or through the use of measures to elevate waste from site surfaces.
- Solid waste storage areas should be located at least 50 ft from drainage facilities and watercourses and should not be located in areas prone to flooding or ponding.
- Except during fair weather, construction and highway planting waste not stored in watertight dumpsters should be securely covered from wind and rain by covering the waste with tarps or plastic.
- Segregate potentially hazardous waste from non-hazardous construction site waste.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.

- For disposal of hazardous waste, see WM-6, Hazardous Waste Management. Have hazardous waste hauled to an appropriate disposal and/or recycling facility.
- Salvage or recycle useful vegetation debris, packaging and surplus building materials when practical. For example, trees and shrubs from land clearing can be used as a brush barrier, or converted into wood chips, then used as mulch on graded areas. Wood pallets, cardboard boxes, and construction scraps can also be recycled.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur
- Inspect construction waste area regularly.
- Arrange for regular waste collection.

References

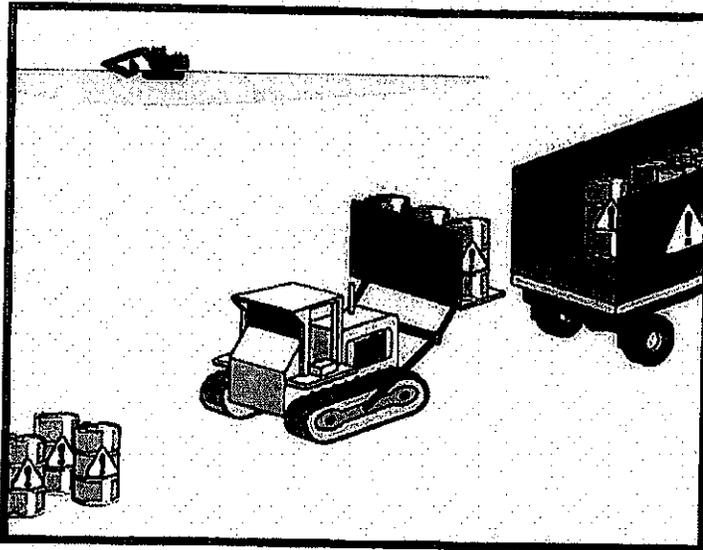
Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Hazardous Waste Management

WM-6



Objectives

EC	Erosion Control	
SE	Sediment Control	
IC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- Primary Objective
- Secondary Objective

Description and Purpose

Prevent or reduce the discharge of pollutants to stormwater from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.

Suitable Applications

This best management practice (BMP) applies to all construction projects. Hazardous waste management practices are implemented on construction projects that generate waste from the use of:

- | | |
|-----------------------------|--------------------|
| - Petroleum Products | - Asphalt Products |
| - Concrete Curing Compounds | - Pesticides |
| - Palliatives | - Acids |
| - Septic Wastes | - Paints |
| - Stains | - Solvents |
| - Wood Preservatives | - Roofing Tar |

- Any materials deemed a hazardous waste in California, Title 22 Division 4.5, or listed in 40 CFR Parts 110, 117, 261, or 302

Targeted Constituents

Sediment	
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	<input checked="" type="checkbox"/>
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None



Hazardous Waste Management

WM-6

In addition, sites with existing structures may contain wastes, which must be disposed of in accordance with federal, state, and local regulations. These wastes include:

- Sandblasting grit mixed with lead-, cadmium-, or chromium-based paints
- Asbestos
- PCBs (particularly in older transformers)

Limitations

- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.
- Nothing in this BMP relieves the contractor from responsibility for compliance with federal, state, and local laws regarding storage, handling, transportation, and disposal of hazardous wastes.
- This BMP does not cover aerially deposited lead (ADL) soils. For ADL soils refer to WM-7, Contaminated Soil Management.

Implementation

The following steps will help reduce stormwater pollution from hazardous wastes:

Material Use

- Wastes should be stored in sealed containers constructed of a suitable material and should be labeled as required by Title 22 CCR, Division 4.5 and 49 CFR Parts 172, 173, 178, and 179.
- All hazardous waste should be stored, transported, and disposed as required in Title 22 CCR, Division 4.5 and 49 CFR 261-263.
- Waste containers should be stored in temporary containment facilities that should comply with the following requirements:
 - Temporary containment facility should provide for a spill containment volume equal to 1.5 times the volume of all containers able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest tank within its boundary, whichever is greater.
 - Temporary containment facility should be impervious to the materials stored there for a minimum contact time of 72 hours.
 - Temporary containment facilities should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be placed into drums after each rainfall. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. Non-hazardous liquids should be sent to an approved disposal site.
 - Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.

- Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.
- Throughout the rainy season, temporary containment facilities should be covered during non-working days, and prior to rain events. Covered facilities may include use of plastic tarps for small facilities or constructed roofs with overhangs.
- Drums should not be overfilled and wastes should not be mixed.
- Unless watertight, containers of dry waste should be stored on pallets.
- Do not over-apply herbicides and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over application is expensive and environmentally harmful. Apply surface dressings in several smaller applications, as opposed to one large application. Allow time for infiltration and avoid excess material being carried offsite by runoff. Do not apply these chemicals just before it rains. People applying pesticides must be certified in accordance with federal and state regulations.
- Paint brushes and equipment for water and oil based paints should be cleaned within a contained area and should not be allowed to contaminate site soils, watercourses, or drainage systems. Waste paints, thinners, solvents, residues, and sludges that cannot be recycled or reused should be disposed of as hazardous waste. When thoroughly dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths should be disposed of as solid waste.
- Do not clean out brushes or rinse paint containers into the dirt, street, gutter, storm drain, or stream. "Paint out" brushes as much as possible. Rinse water-based paints to the sanitary sewer. Filter and reuse thinners and solvents. Dispose of excess oil-based paints and sludge as hazardous waste.
- The following actions should be taken with respect to temporary contaminant:
 - Ensure that adequate hazardous waste storage volume is available.
 - Ensure that hazardous waste collection containers are conveniently located.
 - Designate hazardous waste storage areas onsite away from storm drains or watercourses and away from moving vehicles and equipment to prevent accidental spills.
 - Minimize production or generation of hazardous materials and hazardous waste on the job site.
 - Use containment berms in fueling and maintenance areas and where the potential for spills is high.
 - Segregate potentially hazardous waste from non-hazardous construction site debris.
 - Keep liquid or semi-liquid hazardous waste in appropriate containers (closed drums or similar) and under cover.

- Clearly label all hazardous waste containers with the waste being stored and the date of accumulation.
- Place hazardous waste containers in secondary containment.
- Do not allow potentially hazardous waste materials to accumulate on the ground.
- Do not mix wastes.
- Use all of the product before disposing of the container.
- Do not remove the original product label; it contains important safety and disposal information.

Waste Recycling Disposal

- Select designated hazardous waste collection areas onsite.
- Hazardous materials and wastes should be stored in covered containers and protected from vandalism.
- Place hazardous waste containers in secondary containment.
- Do not mix wastes, this can cause chemical reactions, making recycling impossible and complicating disposal.
- Recycle any useful materials such as used oil or water-based paint.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Arrange for regular waste collection before containers overflow.
- Make sure that hazardous waste (e.g., excess oil-based paint and sludge) is collected, removed, and disposed of only at authorized disposal areas.

Disposal Procedures

- Waste should be disposed of by a licensed hazardous waste transporter at an authorized and licensed disposal facility or recycling facility utilizing properly completed Uniform Hazardous Waste Manifest forms.
- A Department of Health Services certified laboratory should sample waste to determine the appropriate disposal facility.
- Properly dispose of rainwater in secondary containment that may have mixed with hazardous waste.
- Attention is directed to "Hazardous Material", "Contaminated Material", and "Aerially Deposited Lead" of the contract documents regarding the handling and disposal of hazardous materials.

Education

- Educate employees and subcontractors on hazardous waste storage and disposal procedures.
- Educate employees and subcontractors on potential dangers to humans and the environment from hazardous wastes.
- Instruct employees and subcontractors on safety procedures for common construction site hazardous wastes.
- Instruct employees and subcontractors in identification of hazardous and solid waste.
- Hold regular meetings to discuss and reinforce hazardous waste management procedures (incorporate into regular safety meetings).
- The contractor's superintendent or representative should oversee and enforce proper hazardous waste management procedures and practices.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Warning signs should be placed in areas recently treated with chemicals.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- If a container does spill, clean up immediately.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur
- Hazardous waste should be regularly collected.
- A foreman or construction supervisor should monitor onsite hazardous waste storage and disposal procedures.
- Waste storage areas should be kept clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored.
- Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.
- Hazardous spills should be cleaned up and reported in conformance with the applicable Material Safety Data Sheet (MSDS) and the instructions posted at the project site.

Hazardous Waste Management

WM-6

- The National Response Center, at (800) 424-8802, should be notified of spills of federal reportable quantities in conformance with the requirements in 40 CFR parts 110, 117, and 302. Also notify the Governors Office of Emergency Services Warning Center at (916) 845-8911.
- A copy of the hazardous waste manifests should be provided.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

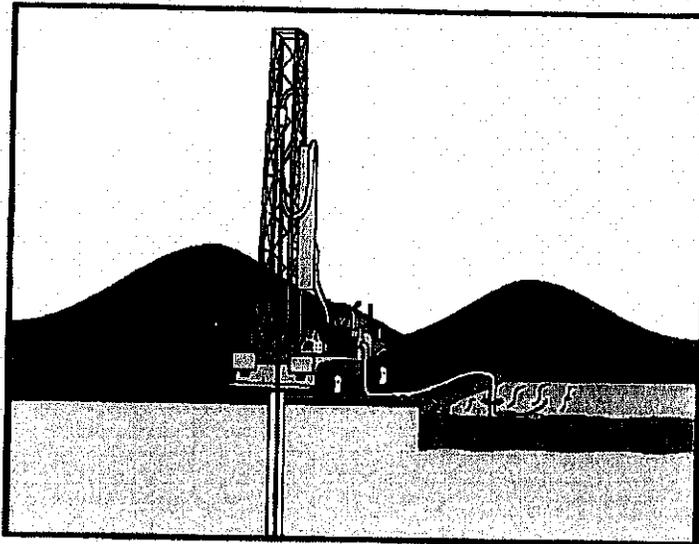
Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005, USEPA, April 1992.

Liquid Waste Management

WM-10



Description and Purpose

Liquid waste management includes procedures and practices to prevent discharge of pollutants to the storm drain system or to watercourses as a result of the creation, collection, and disposal of non-hazardous liquid wastes.

Suitable Applications

Liquid waste management is applicable to construction projects that generate any of the following non-hazardous by-products, residuals, or wastes:

- Drilling slurries and drilling fluids
- Grease-free and oil-free wastewater and rinse water
- Dredgings
- Other non-stormwater liquid discharges not permitted by separate permits

Limitations

- Disposal of some liquid wastes may be subject to specific laws and regulations or to requirements of other permits secured for the construction project (e.g., NPDES permits, Army Corps permits, Coastal Commission permits, etc.).
- Liquid waste management does not apply to dewatering operations (NS-2 Dewatering Operations), solid waste management (WM-5, Solid Waste Management), hazardous

Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- Primary Objective
- Secondary Objective

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	

Potential Alternatives

None



wastes (WM-6, Hazardous Waste Management), or concrete slurry residue (WM-8, Concrete Waste Management).

- Typical permitted non-stormwater discharges can include: water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated pumped ground water; discharges from potable water sources; foundation drains; irrigation water; springs; water from crawl space pumps; footing drains; lawn watering; flows from riparian habitats and wetlands; and discharges or flows from emergency fire fighting activities.

Implementation

General Practices

- Instruct employees and subcontractors how to safely differentiate between non-hazardous liquid waste and potential or known hazardous liquid waste.
- Instruct employees, subcontractors, and suppliers that it is unacceptable for any liquid waste to enter any storm drainage device, waterway, or receiving water.
- Educate employees and subcontractors on liquid waste generating activities and liquid waste storage and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Verify which non-stormwater discharges are permitted by the statewide NPDES permit; different regions might have different requirements not outlined in this permit.
- Apply NS-8, Vehicle and Equipment Cleaning for managing wash water and rinse water from vehicle and equipment cleaning operations.

Containing Liquid Wastes

- Drilling residue and drilling fluids should not be allowed to enter storm drains and watercourses and should be disposed of.
- If an appropriate location is available, drilling residue and drilling fluids that are exempt under Title 23, CCR § 2511(g) may be dried by infiltration and evaporation in a containment facility constructed in conformance with the provisions concerning the Temporary Concrete Washout Facilities detailed in WM-8, Concrete Waste Management.
- Liquid wastes generated as part of an operational procedure, such as water-laden dredged material and drilling mud, should be contained and not allowed to flow into drainage channels or receiving waters prior to treatment.
- Liquid wastes should be contained in a controlled area such as a holding pit, sediment basin, roll-off bin, or portable tank.
- Containment devices must be structurally sound and leak free.
- Containment devices must be of sufficient quantity or volume to completely contain the liquid wastes generated.

- Precautions should be taken to avoid spills or accidental releases of contained liquid wastes. Apply the education measures and spill response procedures outlined in WM-4, Spill Prevention and Control.
- Containment areas or devices should not be located where accidental release of the contained liquid can threaten health or safety or discharge to water bodies, channels, or storm drains.

Capturing Liquid Wastes

- Capture all liquid wastes that have the potential to affect the storm drainage system (such as wash water and rinse water from cleaning walls or pavement), before they run off a surface.
- Do not allow liquid wastes to flow or discharge uncontrolled. Use temporary dikes or berms to intercept flows and direct them to a containment area or device for capture.
- Use a sediment trap (SE-3, Sediment Trap) for capturing and treating sediment laden liquid waste or capture in a containment device and allow sediment to settle.

Disposing of Liquid Wastes

- A typical method to handle liquid waste is to dewater the contained liquid waste, using procedures such as described in NS-2, Dewatering Operations, and SE-2, Sediment Basin, and dispose of resulting solids per WM-5, Solid Waste Management.
- Methods of disposal for some liquid wastes may be prescribed in Water Quality Reports, NPDES permits, Environmental Impact Reports, 401 or 404 permits, and local agency discharge permits, etc. Review the SWPPP to see if disposal methods are identified.
- Liquid wastes, such as from dredged material, may require testing and certification whether it is hazardous or not before a disposal method can be determined.
- For disposal of hazardous waste, see WM-6, Hazardous Waste Management.
- If necessary, further treat liquid wastes prior to disposal. Treatment may include, though is not limited to, sedimentation, filtration, and chemical neutralization.

Costs

Prevention costs for liquid waste management are minimal. Costs increase if cleanup or fines are involved.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.

- Remove deposited solids in containment areas and capturing devices as needed and at the completion of the task. Dispose of any solids as described in WM-5, Solid Waste Management.
- Inspect containment areas and capturing devices and repair as needed.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

FINANCIAL ASSURANCE COST ESTIMATE

FOR

LaPozz

BLM MPO #CACA-48524



CALPORTLAND

Prepared by:

Edward Harrison

Chief Mining Engineer

California Portland Cement Company

Date: 5/24/2010

Financial Assurance Guidelines

1. PRIMARY RECLAMATION ACTIVITIES

Description of task: Rip and Doze Quarry to reclaim 10 acres of disturbance (Approx. 4 phases or first two years work)

Methods to be used: Rip and Doze mine area with D6R dozer.

Miscellaneous Information: Performance calculations shown on Page 5
 All rate based on CalTrans and DOI data for 2010
 D-6R Push Distance: 100'

Over Burden (cubic yards): N/A Topsoil (cubic yards): 0.00 Acres: 10
 Production Rate (Acres/hour): 1 0.8268132 2 1040 3 4 5 6

A. Equipment - List all equipment required to complete identified task. For larges reclamation jobs separate mine areas.

Equipment	Quantity	\$/Hour(ea.)	# of Hours	Cost(\$)
1 D-6R Dozers	1	92.99	12.09	\$1,126
2 D-6 Ripper Attachement R3	1	4.7	12.09	\$57
3 6000Gal Water Trk(59976GVW)	1	48.94	12.09	\$592
4 Water pump attachment	1	5.03	12.09	\$61
5				\$0
6				\$0

\$1,834

B. Labor - List all labor required to complete identified task.

Labor Category	Quantity	\$/Hour	# of Hours	Cost(\$)
1 Operating Engineer Group 8	1	57.11	12.09	\$691
2 Teamster Group 8	1	47.00	12.09	\$568
3				\$0
4				\$0
5				\$0
6				\$0

\$1,259

B. Materials - List all materials required to complete identified task.(Include disposal costs)

Materials Category	Quantity	\$/Unit	Cost(\$)
1			\$0
2			\$0
3			\$0
4			\$0
5			\$0
6			\$0

\$0

Direct cost for this task: \$3,093

Financial Assurance Guidelines

1. PRIMARY RECLAMATION ACTIVITIES

Description of task: Reseeding quarry and road.

Methods to be used: Hand Broadcast seeds with general laborers, one water truck.

Miscellaneous Information:

1 Laborers@0.75 Acres/Hr. 8hrs/day, 85% effective= 0.64 ac./hr

Over Burden (cubic yards): N/A Topsoil (cubic yards): N/A Acres: 10
 Production Rate (cubic yards/hour): 1 0.64 2 3 4 5 6

A. Equipment - List all equipment required to complete identified task. For larges reclamation jobs separate mine areas.

Equipment	Quantity	\$/Hour(ea.)	# of Hours	Cost(\$)
1 6000Gal Water Trk(59976GVW)	1	57.83	2.604167	\$151
2 Water pump attachment	1	5.01	2.604167	\$13
3				\$0
4				\$0
5				\$0
6				\$0

\$164

B. Labor - List all labor required to complete identified task.

Labor Category	Quantity	\$/Hour	# of Hours	Cost(\$)
1 Landscape Laborer	6	8.33	2.604167	\$130
2 Teamster Group 8	1	47.00	2.604167	\$122
3				\$0
4				\$0
5				\$0
6				\$0

\$253

B. Materials - List all materials required to complete identified task.(Include disposal costs)

Materials Category	Quantity	\$/Unit	Cost(\$)
1 Seeds (see attached quote for break down)	10	1282.99	\$12,830
2			\$0
3			\$0
4			\$0
5			\$0
6			\$0

\$12,830

Direct cost for this task: \$13,246

Summary of Costs

LaPozz Financial Assurance Cost Estimate

Mine Plan Operations #CACA-48524

May 24, 2010

Total of all Primary reclamation Activities Cost	\$3,093
Total of all Revegetation Costs	\$13,246
Total of all Plant Structures & Equipment Demo Costs	\$0
Total of all Miscellaneous Costs	\$0
Total of all Monitoring Costs	\$2,000
Total Direct Costs	\$18,339
Supervision (6.6%)	\$1,210
Profit/Overhead (13.8%)	\$2,531
Contingencies (10%)	\$1,834
Mobilization/Demobilization (5%)	\$917
Total of Indirect Costs	\$6,492
Total of Direct and Indirect Costs	\$24,831
Lead Agency Admin	N/A

Mine Plan Operations #CACA-48524

May 24, 2010

Performance Calculations

Loader 992D (13.5 cyd bucket)	
Average Loader cycle times for 992G-994D	0.7 Min.
Cycles per hour (100% Efficiency)=	85.7 Hour
83% Efficiency	73 Cycles
Cycles/Truck	5 Cycles
Trucks/Hour	15 Trucks
Minutes/Truck	4.1 Min
	983.6 cyds

Truck 777D (78cyd cap.) Loading & Dumping		
Truck Exchange at Loader	0.8 Min.	
Loading truck (6 passes)	4.1 Min.	
Dump time	1.2 Min.	
Total	6.1 Min.	
Travel (500ft)		
Travel Time loaded	0.7 Min.	
Travel Time unloaded	0.5 Min.	
CYDS/H=78cyds X (60min/Total cycle)		
Feet	Cycle time	CY/H
500	7.3	641.10
1000	7.8	600.00
1500	8.3	563.86
2000	8.8	531.82
2500	9.3	503.23
3000	9.8	477.55

Dozer D6T	
Ripping	
Ripper	1 shank
Seismic Velocity of (in feet per second X1000)	4
Production (BCY/HOUR)	2001
Area=1BCY/1.5yds deep=	4002
Acres/hour	0.8268132
Pushing	
100' Push 80% efficiency (cy/hr)	1040

S&S SEEDS

December 22, 2009

TO:	Edward Harrison	FAX NUMBER:	626 852 9347
COMPANY:	California Portland Cement	PHONE NUMBER:	626 852 6200
RE:	2007 Mojave Quarry - Budget numbers	EMAIL ADDRESS:	eharrison@calportland.com

Dear Edward,

Following please find our pricing for the above referenced project:

Species-Common name	Total lbs	\$/lb	
Atriplex canescens - 4 Wing Saltbush	7,728	7.00	\$
Achnatherum hymenoides - Rice Grass	9,660	21.00	
Vulpia myuros - Annual Fescue	1,288	7.00	
Atriplex spinifera - Desert Saltbush	2,898	18.00	
Atriplex confertifolia - Alternate 1	2,898	12.00	
Atriplex polycarpa - Alternate 2	2,898	6.00	
Slow Release Fertilizer - Biosol 7-2-3	16,100	0.69	
Freight to Mojave, CA 93501 down	37,674	\$2000.00	aprox can go

Please contact us if we can be of further assistance.

Sincerely,

Gilbert Barajas
Manager
S&S Seeds, Inc

Calculated by E. Harrison CalPortland:

<u>Species-Common name</u>	<u>Total lbs</u>	<u>\$/lb</u>	<u>\$/acre</u>
Atriplex canescens – 4 Wing Saltbush	24lbs/acre	7.00	\$168
Achnatherum hymenoides – Rice Grass	30lbs/acre	21.00	\$630
Vulpia myuros – Annual Fescue	4lbs/acre	7.00	\$28
Atriplex spinifera – Desert Saltbush	9lbs/acre	18.00	\$162
Atriplex confertifolia – Alternate 1	9lbs/acre	12.00	\$108
Atriplex polycarpa – Alternate 2	9lbs/acre	6.00	\$54
Slow Release Fertilizer – Biosol 7-2-3	50lbs/acre	0.69	\$34.50
Freight to Mojave, CA 93501	37,674	2000/322	\$6.21

Total Cost per Acre: \$1190.71
Tax(7.75%): \$ 48.21
\$1282.99/acre

LaPozz SMARA references:

- Caterpillar Performance Handbook (38th ed.). 2008. Peoria, IL: Caterpillar Inc.
- Department of Industrial Relations 2010. **General prevailing wage determinations: 2010-1 journeyman determinations for:**

**GENERAL PREVAILING WAGE DETERMINATION MADE BY THE DIRECTOR OF INDUSTRIAL RELATIONS PURSUANT TO CALIFORNIA LABOR CODE PART 7, CHAPTER 1, ARTICLE 2, SECTIONS 1770, 1773 AND 1773.1 FOR COMMERCIAL BUILDING, HIGHWAY, HEAVY CONSTRUCTION AND DREDGING PROJECTS
CRAFT: #OPERATING ENGINEER**

**GENERAL PREVAILING WAGE DETERMINATION MADE BY THE DIRECTOR OF INDUSTRIAL RELATIONS PURSUANT TO CALIFORNIA LABOR CODE PART 7, CHAPTER 1, ARTICLE 2, SECTIONS 1770, 1773 AND 1773.1
CRAFT: ## LANDSCAPE MAINTENANCE LABORER**

**GENERAL PREVAILING WAGE DETERMINATION MADE BY THE DIRECTOR OF INDUSTRIAL RELATIONS PURSUANT TO CALIFORNIA LABOR CODE PART 7, CHAPTER 1, ARTICLE 2, SECTIONS 1770, 1773 AND 1773.1
FOR COMMERCIAL BUILDING, HIGHWAY, HEAVY CONSTRUCTION AND DREDGING PROJECTS
CRAFT: TEAMSTER (APPLIES ONLY TO WORK ON THE CONSTRUCTION SITE)**

- Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership) (April 1 2010-March 31 2011). State of California Business, Transportation, and Housing Agency, Department of Transportation Division of Construction.