BUREAU OF LAND MANAGEMENT

MINERAL REPORT

Surface Use Determination
for
The "Popcorn Shrimp" and
"Yahoo #1" Unpatented
Placer Mining Claims,
MMC123456 and MMC250478

A considerable number of attachments, especially oversized maps, have been omitted to reduce bulk in this edition.

T. 8 N., R. 2 E.
Section 8: S½SE¼SE¼
Section 17: NE¼

99th PRINCIPAL MERIDIAN
GREAT PLAINS COUNTY, MONTANA
APPROXIMATELY 163 ACRES

Smith & Jones, Mineral Examiners
Signatures, reviews, approvals, etc.

Based on a real case! Names and other salient data have been changed and redacted to protect members of the public and Bureau employees.

INTRODUCTION

At the request of the U.S. Attorney, District of Montana, we conducted a Surface Use Determination Examination on September 19, 1995, on mining claims owned by High Ray Enterprises and Santa Claus Gold Enterprises. The subject claims are located on BLM administered lands in the Ground Zero Resource Area. The purpose of the examination was to determine if the surface uses of the "Popcorn Shrimp" and "Yahoo #1" unpatented placer mining claims are reasonably incident to prospecting, mining, or processing operations within the meaning of 30 USC 612(a) and 43 CFR 3712.1, and to determine if operations were causing unnecessary or undue degradation of the public lands. No mineral examination to determine the presence or absence of a valuable mineral deposit within the meaning of 30 USC 22 et seq. was requested and none was performed. This report should be used only for the purpose for which it is intended.

LANDS INVOLVED

The Popcorn Shrimp (MMC123456) unpatented association placer mining claim comprises 160 acres within the NE¼ of section 17, T. 8 N., R. 2 E., 99th Principal Meridian. The Popcorn Shrimp claim was located on June 10, 1993, by Deepfrie DeShrimp, (R.F. Johnson , agent). The Popcorn Shrimp was quit claim deeded to Hello Kitty 5 Enterprises, (R.F. Johnson , trustee), on August 20, 1993. The Yahoo #1 (MMC876768) unpatented placer mining claim encompasses 20 acres within the S½SE¼SE¼ of section 8, T. 8 N., R. 2 E., 99th Principal Meridian. The Yahoo #1 was located on April 1, 1986, by Bob Morenci. Yahoo #1 was quit claim deeded to R. F. Johnson on April 3, 1986. R.F. Johnson quit claim deeded the Yahoo #1 to High Ray Enterprises on August 7, 1992 (present trustee, R.F. Johnson).

These lands are Public domain lands (Federal Mineral/Federal Surface) managed by the Bureau of Land Management and are open to mineral entry (Fig. 1).

The claims are accessed from Butte by taking I-15 north, approximately 11 miles to the Elk Park interchange. From the interchange proceed west across I-15 and turning in a northeasterly direction on the county road known as Elk Park Stage Road approximately 4.3 miles until the claims are reached (Figs. 2 & 3).

Related History

Prior to December 31, 1992, Johnson was the owner of a number of mining claims: Yahoo 1 & 2 (MMC-872228 & 222479), Wild Thing 1, 2, &3 (MMC-27748, 277481 & 250482), Loco Weed 19 & 20 (MMC-930021 & 930022), and the Apple Sauce (MMC 47797).

The Apple Sauce mining claim was originally located by P.D. James, A.F. Tapp, B. Bost, Alberta Bost, U.S. Aldhorst, Robert Goss, David Goss, and Q.B. Tapp on February 5, 1950. Ownership of the Apple Sauce mining claim passed from the Apple Sauce Mining Company, Mr. Alberton Garver Goss, President to the Apple Sauce Limited Legal Corporation, Mr. Ray Johnson sole shareholder, on September 13, 1984.FIGURE NO. 1 - Master Title Plat
FIGURE NO. 2 - General location
FIGURE NO. 3 - Mining claim location map

On December 7, 1992, Johnson filed an Affidavit of Assessment Work with the Bureau of Land Management (BLM). However, Johnson omitted Claim No. MMC 43697 from the Affidavit.

On September 15, 1993, BLM's Montana State Office declared Claim No MMC 43697 abandoned and void for failure to file evidence of assessment work or a notice of intention to hold the claim during the filing period ending December 30, 1992. Johnson appealed this decision to the Interior Board of Land Appeals (IBLA), which affirmed the decision of the Montana State Office on October 28, 1994.

Following the issuance of the Montana State Office's decision of September, 15, 1993, Johnson restaked a new mining claim, the "Popcorn Shrimp" (No. MMC 123456), that covered approximately the same ground as Claim No. MMC 43697.

On November 30, 1994, the Ground Zero Resource Area Manager, sent a letter to Johnson informing him that because Claim No. MMC 43697 had been declared void, his use and disposal of common variety minerals (such as sand, gravel, and river cobbles) from the claim site was illegal; and the letter notified Johnson that if he continued to remove such common variety minerals from the claim site, the matter would be referred to the U.S. Attorney's Office.

Johnson filed a complaint with the U.S. District Court, District of Montana, asking for judicial review of the IBLA decision affirming the decision of the Montana State Office declaring Claim No. MMC 43697 abandoned and void. The complaint also contained a motion for a Temporary Restraining Order and Preliminary Injunction against BLM. The judge denied the motion for the restraining order and preliminary injunction and ruled that the judicial review would be carried forward separately, as appropriate, through the legal system procedures.

The U.S. Attorney counterclaimed, alleging that: 1) Johnson has continued to remove and sell common variety materials from the mining claims, and in so doing, has committed a trespass against the United States, 2) Johnson 's residential use of the mining claims are not reasonably incident to prospecting, mining, or processing operations and therefore are in violation of the mining laws of the United States and constitute a trespass against the United States, and 3) the storage of junked vehicles, inoperable equipment, and miscellaneous trash and debris are not reasonably incident to prospecting, mining, or processing operations and therefore are in violation of the mining laws of the United States and constitute a trespass against the United States.

The U.S. Attorney requested that a Surface Use Determination Examination be done to determine whether the mining claims are being used for prospecting, mining or processing operations and uses reasonably incident thereto.

METHODS

Field Methods and Procedures

We were assigned a surface use determination for the Popcorn Shrimp and Yahoo # 1 placer mining claims on September 8, 1995. A letter was sent to the mining claimant at the address of record on August 12, 1995, informing the claimant that we would conduct a field examination of the operation site on September 19, 1995.

We conducted a field examination on September 19, 1995, to collect data that would allow us to make a determination of whether the Popcorn Shrimp and Yahoo # 1 placer mining claims were being used for any purposes other than prospecting, mining, or processing operations and uses reasonably incident thereto and whether unnecessary or undue degradation was occurring

at the operation site. We were accompanied and assisted at the site by:

Al Larree, Special Agent, MT State Office, BLM
Fred Curlee, State Staff Ranger, MT State Office, BLM
Moe Smoaks, District Ranger, Ground Zero District Office, BLM
Elmer McCurdy, Ranger, Ground Zero District Office, BLM.
Richard R. Richardson, Assistant U.S. Attorney, District of MT.

Mr. Larree, and Mr. Curlee assisted us with equipment inventory the entire day. Mr. Richards talked briefly with Mr. Rayord Johnson when we arrived at the site, then accompanied us until about noon. Mr. Smoaks and Mr. McCurdy did not directly assist in our field work; however, they remained in the general vicinity of the mining claims during the day and periodically witnessed our progress.

We mapped the operation site using standard compass and resection techniques and documented the location of disturbed areas, material stockpiles, equipment storage areas, and photograph sites (Appendix A). We described all features (Table 1) with reasonable access. Photographs were taken of most equipment with a 35 mm camera with a date feature (Appendix B). We stereoscopically examined aerial photographs (various scales) of the site taken on October 21, 1993, and February 15, 1994. One of us (Smith) searched records on October 5, 1995, at the MT Department of Mines and Mineral Technology for available production records from the Popcorn Shrimp and Yahoo # 1 mining sites. Publications referenced in the text provided information for the regional production history. Geologic and survey control data and production capability information used in this report were collected during previous visits (Jones) to the operation site on September 14, 1992, and October 12, 1994. Equipment inventory data and operation descriptions also were collected during a previous visit (Smith) on January 18, 1995.

The Assistant U.S. Attorney told us that the claimant had requested that we not touch equipment, so we tried to examine as much of the equipment as possible without touching it. We did not closely examine the operable equipment in the conveyor-screen-trommel area during the September 19 examination since we were advised by law enforcement staff that the mining claimant (who monitored our work from that area) might be intimidated or perceive our work as harrassment, and lob tmatoes at us. We did not approach nor examine a building on the western side of the operation site described as the claimant's residence in reports of previous field visits. Because we did not have reasonable access to examine all surface features and equipment, we used photographs and data collected during earlier field examinations to supplement the data collected on September 19. Changes in equipment condition or distribution on the mining claims between earlier examinations and our September 19 examination are fully noted in the text. Therefore, our reasonably incident and unnecessary or undue determinations were made on the basis of the current status of the condition of the mining claims and current condition and distribution of the equipment.

Equipment storage areas on the mining claims are numbered and described as "sites" on the surface map (Appendix A). Site numbers shown on the map correspond to site numbers described in Table 1 and listed in each photograph caption. Photographs in Appendix B correspond to numbers on the map and to numbers shown in Table 1.

Table 1. Equipment Inventory for the Popcorn Shrimp and Yahoo #1 Placer Mining Claims, 9/19/95.

SITE NO.	ITEM DESCRIPTION & I.D. NO. (FEL=Front End Loader)	QUANT.	CONDITION	PHOTO NO.	POTENTIAL USE IN OPERATION	COMMENTS	REASONABLY INCIDENT TO MINING?
1	Crushed Vehicle pile	5	Rusty, crushed, inoperable	R1P1	Scrap metal		No
2	15'x18'x3' trash pit with buckets, rusted and broken bottles, 1 water heater, bed springs, charred wood, old oil cans, couple of plastic bottles	pit about half full	Rusty, broken, crushed, inoperable	R1P2	None	Degradation from contents unknown	No
3	2 small borrow pits	approx. 122 cubic yards	Partially revegetated	R1P3	Sample site		Yes
4	Equipment storage area with skid, (serial no. MT109), with cable eyelets, 9'x7'x5'	1	Operable, good condition	R1P4	Equipment transport or base		Yes
4	Austin, Western Grader, Model 99H (VIN H1911), 4 cylinder diesel	1	tires rotted, hydraulic hoses weather checked badly, rusty parts including generator, hydraulic cylinders good, operable with maintenance	R1P4	Road work grading of work areas, ditch digging		No - Excessive
4	Ford F-100, (license no. 1L1111, MT, 1988, VIN 7117), at least 1-ton truck, 5 cubic yard bed. V-8 with carburetor approximately 302 cubic inch motor, 6 tires and 2 rims in bed	1	hydraulic cylinder leaking, belts good, tires fair to good shape, operable with little maintenance	R1P5	Material haulage, general service vehicle	One foot diameter grease spot on ground	Yes
4	International L110,(license no. 1KF-221, MT, 1983), 1-ton cable boom, with winch, 3/4" cable, and blocks	1	Weather checked hydraulic hoses, tires partly rotted, no windows, some hoses operable, operable with maintenance	R1P6	General service, equipment movement		No - Excessive

SITE NO.	ITEM DESCRIPTION & I.D. NO. (FEL=Front End Loader)	QUANT.	CONDITION	PHOTO NO.	POTENTIAL USE IN OPERATION	COMMENTS	REASONABLY INCIDENT TO MINING?
4	Dual tandem axles with springs, (serial no. HC 819-3 on spring), Standard Forge & Axle Co., (serial no. 8U-89762)	1	operable	R1P7	Trailer or truck frame, equipment or material haulage		Yes
4	Waukesha diesel generator, model 9NKD, 7'x 8¼' (serial no. 855555), 9 cylinder diesel with small 4 cylinder pony, 3 phase, 60 cycle, 240 V, 450 amps.	1	Wiring checked but good, operable	R1P8	Electric power generator		Yes
5	Stockpile with ¼ to 4" diameter material, 20'x17'x7'	88 cubic yards	--------	R1P9	Storage		Yes
6	Goodyear SR5, 8' dia., 3.1' rim size, 3' wide, front end loader tire (FEL)	1	rotted and chewed	R1P10	None		No
6	Goodyear 29.5-35 FEL tires	2	rotted	R1P10	None		No
6	Goodyear 37.5-39 FEL tires	4	chewed tread	R1P10	None		No
6	General 33.25-35 FEL tire	1	fair condition	R1P10	Front end loader spare		Yes
6	Bridgestone 37.5-39 FEL tires	2	chewed tread with holes	R1P10 R1P11	None		No
6	Firestone 37.5-39 FEL tires	3	checked tread, ripped sidewall, chewed tread	R1P10 R1P11	None		No
6	Goodyear 29.5-29 FEL tire	1	fair	R1P10	Front end loader spare		Yes
6	Yokohama 29.5-29 FEL tire	1	bald tread	R1P11	None		No
6	Goodyear 29.5-29 FEL tire	1	chewed tread with holes	R1P11	None		No
6	Bridgestone 37.25-35 FEL tire	1	chewed and rotted tread	R1P11	None		No

SITE NO.	ITEM DESCRIPTION & I.D. NO. (FEL=Front End Loader)	QUANT.	CONDITION	PHOTO NO.	POTENTIAL USE IN OPERATION	COMMENTS	REASONABLY INCIDENT TO MINING?
6	General 37.25-35 FEL tire	1	chewed and rotted tread	R1P11	None		No
6	Firestone 37.25-35 FEL tires	3	rotted sidewalls, massive tread separations	R1P12	None		No
6	40 gallon steel barrels	2	rusted with holes	R1P11	None		No
6	Dragline bucket,(serial no. 555-555), YAAN, with 1" cable, 2 cubic yards	1	teeth good, operable	R1P11	Material loading if dragline purchased		No
6	truck dolly with duals	1	Tires with no tread, checked and chewed, bearings look good, brake lines checked and rotted, operable with maintenance	R1P11	Pipe and equipment transport		Yes
6	Fifth wheel	1	Tires with no tread, 5th wheel good, operable	R1P11	Trailer hitch for trucks		Yes
6	Concrete culvert, sections 1.5" wall, good shape, 30" inside diameter.	3 sections 12 linear feet	Good shape, operable	R1P12	Water line		No - Excessive
6	Galvanized culvert, 40" inside diameter, 1/8" wall thickness	20 linear feet	Full of bullet holes	R1P12	Scrap metal for equipment covers		No
6	Wire Mesh 3" square 1.5" square 0.5" square 1/8" square	3"-40 sq.ft 1.5"-60 sq.ft 2 mesh- 40 sq.ft 8 mesh- 45 sq.ft	Some bent, surface rusted, but all operable	R1P12	Screen deck, gravity separation		Yes

SITE NO.	ITEM DESCRIPTION & I.D. NO. (FEL=Front End Loader)	QUANT.	CONDITION	PHOTO NO.	POTENTIAL USE IN OPERATION	COMMENTS	REASONABLY INCIDENT TO MINING?
6	Jaw crusher, belt drive, capacity = 13" x 8.5," 21" diameter belt wheel	1	Rusted and frozen, but may be made operable with work		No use in placer operation; potential use for small scale gravel operation		No
6	Auger, 18"x16"x14" hopper, auger diameter = 6"	1	Bent and slightly rusted, operable		Parts for material transport equipment		Yes
6	Electric motors, 7.35 amp, 230 volt	3	Wiring poor, doubtful if operable		Electric motor parts		No - Excessive
6	Truck gear box (serial no. 1212127)	1	Operable		Gear parts		Yes
6	Angle iron, variable sizes and thicknesses	175 linear feet	Rusted surface but otherwise good condition	R1P13	Conveyor frames, grizzly parts		Yes
6	10'x10' pile wood and lumber	1	All rotted	R1P13	None		No
6	Pile galvanized metal,	40 sq.ft.	Good and usable	R1P13	Equipment covers, chutes		Yes
6	Sluice, 1.5'x1.5'x13' with ½ HP electric motor	1	Motor operable, slightly rusted	R1P11	Tail sluice off trommel		Yes
6	Pile galvanized metal, corrugated	60 sq.ft.	Rusted and bent but usable	R1P13	Chutes, equipment covers		Yes
6	Pipe variable sizes, ½" to 4" in diameter, average 2"	160 linear feet	Slightly rusted but usable		Water line, equipment frames		Yes
6	5'x5' pile, electric motors and air conditioner and compressors from autos	1	All inoperable	R1P15	Electric motor parts, compressor parts		No - Excessive
6	Pile 10'x10', bicycle parts, scrap metal, hydraulic line	1	Hydraulic line weather checked, most unusable		None		No

SITE NO.	ITEM DESCRIPTION & I.D. NO. (FEL=Front End Loader)	QUANT.	CONDITION	PHOTO NO.	POTENTIAL USE IN OPERATION	COMMENTS	REASONABLY INCIDENT TO MINING?
14	Storage tank, cylindrical, 20'x6' diameter	1	Rusted outside but useable		Fuel or liquid storage		Yes
14	Stockpile, up to 1' diameter with rare 2' diameter boulders	4500 cubic yards			Storage		Yes
15	Fine fraction pile	400 cubic yards			Storage		Yes
16	Conveyors, 1' to 1.5' belts, 20' to 100' long	4	Operable	R2P24	Material transport		Yes
16	Vibrating screen, 3 deck	1	Operable	R2P24	Material classification		Yes
16	Trommel, 7 foot diameter	1	Operable	R0P3	Material classification		Yes
16	Knudsen bowl	1	Operable		Heavy metal recovery		Yes
16	Crane, 50 foot boom	1	Operable	R2P24	Equipment transport		Yes
NW of16	Grizzly, 5" minus	1	Operable	R3P3	Material screening		Yes
N. of 16	Car Bodies, on tops	2	Inoperable	R3P2	None		No
N. of 16	Flat bed trailer	1	Inoperable(?)	R3P2	None(?)		No

Note: Approximately six pages of table 1 omitted to reduce bulk.

PHYSIOGRAPHIC DATA

The subject claims lie within Great Plains County, Montana. The claims lie within the Rocky Mountains Province (Marx, 1891) and are within the Whoops Region, which lies between the Continental Divide to the northeast and the Pipestone Corridor to the southwest.

The Whoops region is divided into the western and eastern parts by the Missouri River Valley which runs north-south. The western two-thirds of the this Region is mountainous terrain of the Pipestone and Granite Mountains, the former rising to 17,000 feet. The topography is steep and the relief is up to 5000 feet. To the east of the Missouri River lies a basalt-capped plateau at an elevation of 13,500 feet, and the Riopelle Mountains, which rise to 15,000 feet, have a relief of about 7000 feet.

The claims straddle a portion of the Missouri River. The Missouri River originates northeast of Two Dot in Northern Montana. The climate of this region is characterized by short, cool summers, a low relative humidity, and interminably dismal, long, sub-freezing winters.

GEOLOGIC SETTING

The oldest rocks in the area consist of the sequence of 1.82-1.775 Ga Precambrian rocks which consist of some 40,000 feet of mafic to felsic submarine volcanics and clastic sediments. This greenstone belt was folded, metamorphosed, and intruded by granites at 1.76-1.63 Ga. There is no record of sedimentary deposition or igneous activity in this area until the Laramide orogeny at which time small granodiorite plutons were intruded into the Precambrian schist and granite. During the Late Tertiary (20-9 Ma), basalt flows were erupted, and to the south, rasin and mange faulting became important. During the last 9 Ma, volcanism and tectonism subsided and the dominant geologic processes have been erosion and deposition of alluvium (Yeltsin, 1892).

SITE GEOLOGY

The subject mining claims are situated along a broad meander bend of the Missouri River. Elevations vary from 5133 feet in the southwestern part of the Popcorn Shrimp Mining Claim to about 6750 feet along the northwestern boundary of the Yahoo #1 claim in the Missouri channel. The topography varies from rugged cliffs that overlook the river to rounded hills with slopes up to 19 degrees (42%).

The mining claims encompasses Precambrian Belt Group basement rocks, volcanic rocks, and unconsolidated alluvial and colluvial material. Precambrian Belt Group rocks are exposed on hilltops and slopes throughout the southern part of the mining claim. These consist of a thick sequence of schists cut locally by milky quartz veins up to a few inches wide. The chloritized schists and gneisses weather to rounded hills and knolls with colluvium covered slopes.

Precambrian Belt Group rocks are unconfortably overlain with pink to reddish basalts and andesites in the northwestern part of the Popcorn Shrimp Claim. These flows form the cliffs above the Missouri channel.

The deposit itself consists of clay- to boulder-sized alluvial material deposited in the interior of an uplifted meader bend. This material consists of rounded to well round clasts of quartzite, schists, gneisses, granitioids, volcanics, coprolites and sedimentary rocks in a clayey to sandy matrix. The more southerly parts of the deposit are overlain with colluvium sloughed from the knolls of Precambrian basement.

MINING HISTORY

Regional Mining History

Mining and prospecting in the region of the Popcorn Shrimp and Yahoo # 1 placer mining claims has occurred intermittently since the 1850s. Commodities produced include gold derived from placer deposits, and sand and gravel or borrow material.

Early prospectors recognized both lode and placer deposits of gold in and along all the flanks of the Pipestone Mountains (Waltson, 1902, pl. 1; MT Bur. Mines, 1911, p. 12). The most prolific producing placer gold districts occur in the western and northern parts of the range and include the Cleaver District near Two Dot, the Sidney River districts northeast of Miles City, the Ninemile Creek districts near Huson and the Big Deal Creek drainage area near Superior, MT. However, sporadic production also has been reported from placer deposits along the eastern and southeastern flanks of the Pipestones much nearer to the subject mining claims. These areas include the Murkey Creek and Dismal Canyon drainage areas about 18 miles north of the subject mining claims, the Last Chance Gulch drainage area (including the Zitzenclopper District) about 3 miles to the west, the Squall Creek area about 40 miles to the northeast, and the Missoula district very near the Popcorn Shrimp and Yahoo # 1 claims. All the placer deposits consist of channel gravels or terrace gravels along reaches of present-day ephemeral or flowing streams.

Records at the MT Department of Mines and Mineral Technology indicate that the subject mining claims are located in the Zitzenclopper Placer Mining District. However, the MT Bureau of Mines (1901, p. 12) and Johnston (1902, pl.1) assigned T. 8 N., R. 2 E., to the Missoula district. The Zitzenclopper district encompassed the eastern part of the Humbug drainage area. Consequently, the exact distribution of production from deposits in the immediate vicinity of the subject mining claims is uncertain, and we are not certain if any of the reported production came from the subject mining claims.

Johnston (1902, p. 86) estimated the total production through 1968 of placer deposit gold from the Murky Creek and Dismal Canyon area to be 4,007 ounces. The MT Bur. of Mines (1961, p. 56) reported $12,758 worth of gold from the Dismal Canyon area during the period 1934 to 1949 at an average gold price of $35 per ounce (365 ounces). Additionally, Johnston (1902, p. 67) estimated that about 7 ounces of gold were recovered from a deposit in Squaw Creek in T. 9 N., R. 2 E. in 1933. All this production is significant because these deposits occur along tributaries to the Missouri River up gradient from the subject mining claims.

Johnston (1902, p. 86) reported that 73 ounces of gold was produced from the Zitzenclopper district from 1902 to 1933 and 22 ounces were produced from 1934 to 1942. The MT Bur. of Mines (1961, p. 57) reported that $770 worth (22 ounces at $35 per ounce) of gold was produced from the Zitzenclopper district from 1934 to 1949. We are uncertain whether part of this reported production came from the Missouri drainage or farther to the West.

The Missouri district (Second-To-Last-Chance Gulch, a tributary to the Missouri, 0.5 miles upstream from the subject claims, Fig. 3) produced 43 ounces of gold from 1902 to 1968 (Johnston, 1902, p.84). Forty-one ounces were produced from 1902 to 1933, and 2 ounces were produced in 1935 and 1936.

Sand and gravel has been produced sporadically along the Missouri River system. Sizable sites occur in Sec. 10, T. 8 N., R. 2 E., about 4 miles northeast of the subject mining claims, and in Sec. 33, T. 9 N., R. 2 E., about 6 miles north of the subject claims. Material from sites was used for local road construction near Two Dot, MT, and for construction of U.S. Interstate 90 which connects Ground Zero with Billings, Whitehall, and Pipestone.

MINERAL EXPLORATION AND DEVELOPMENT WORK

Development Work

Mining has occurred intermittently at the location of the Popcorn Shrimp and Yahoo # 1 placer mining claims. Extraction sites include borrow areas, older pits, and pits currently being mined.

Two borrow areas have been dug in the southeastern part of the operation area (shown as site 3 on the surface feature map, Appendix A). Pits are dug to a maximum of 5 feet, and we estimate that about 122 cubic yards of material has been excavated. Both pits are partially revegetated; bushes up to 40 feet tall are growing in the easternmost pit. Mounds of dirt on the southern margin of both pits are eroded and also vegetated, suggesting the disturbance occurred several years ago. These borrow pits are evident on air photos taken February 2, 1984. Material from the pits was probably used as fill material, or the pits were dug as test trenches (samples) for gold content.

Older pits exist in the western part of the operation site in lower bench gravels (Appendix A, southwest and northeast of site 8). The largest is up to 200 feet in diameter and 20 feet or more in depth. We did not precisely determine the volume of material removed; however, we estimate that several thousand cubic yards have been extracted. Only a small amount of oversize material and/or tailings exist along the Missouri River to the west, indicating that material excavated from these older pits was transported from the pit location, either for processing elsewhere for gold or for use as sand and gravel. The southernmost pit contains numerous bushes up to 7 feet tall and many small plants. Others show more recent disturbance; however, clearly the pits mostly were excavated many years ago. Based on the vegetation and lack of tailings anywhere on the Popcorn Shrimp and Yahoo # 1, we suspect material from these pits was extracted and taken from the operation area for use as sand and gravel. These pits are not being used to extract material in the present gold processing operation.

Two pits are currently being mined in the operation area. Neither of these is shown on the surface feature map; however, the larger of these is shown in Photo ROP4, north of site 16 (Appendices A and B). The smaller pit is located north of the worker quarters (residence) to the northwest of the mapped area (Appendix A). Both pits are located partly on the Popcorn Shrimp and partly on the Yahoo # 1 placer mining claims.

On October 12, 1994, we (Jones) estimated that about 180 cubic yards had been excavated below the bench level in the smaller, westernmost pit. We did not estimate the volume extracted from the larger pit. Several thousand cubic yards of different-size screened fractions were stockpiled at the operation site in September 1991, material that probably was excavated and processed from these 2 pits.

Operation Description

The current operation produces sand and gravel, screened construction materials, and a heavy mineral fraction that presumably contains gold. Equipment used in the operation is operable but is in a condition that requires high maintenance. Most pieces of equipment are used and rigged with parts derived from other second hand equipment. For example, rollers on the trommel are lined with used tires. Most pieces of equipment used in this operation obviously have been made operable by experienced and innovative mechanics.

Material currently is mined from 2 pits in the northwestern part of the operation area using a Caterpillar 992 C rubber-tired, front end loader (FEL) or a KW Dart FEL with about 10 cubic yard buckets. Consolidated material that can't be excavated with an FEL is ripped with a Caterpillar

D7 prior to further excavation. Unprocessed material is loaded directly to buyer trucks with one of the FELs. Material to be screened or processed for heavy minerals is transported with the FEL to a stationary grizzly about 150 feet northwest of the area labeled site 16 on the surface feature map (Appendix A).

Material dumped to the grizzly is screened to a 5 inch minus fraction with the oversize piled to the side (Photos ROP4 and R3P3). The 5 inch minus fraction drops to a conveyor, powered with an electric generator, and is transported about 100 feet to the second bench level to a wash plant and 3 deck vibratory screen (R2P24). Water is pumped to the wash plant with a gasoline powered pump set in the Missouri River about 200 feet away to the northwest.

At the vibratory screen, material is washed and screened to several size fractions. The conveyor from the grizzly dumps to a 2.5 inch screen deck. The 2.5 inch overs fall to a conveyor which stockpiles the oversize. The conveyor is moved to the desired stockpile location (with a crane and other equipment) or the stockpile is moved using the FELs. Site 14 on the surface feature map contains material of this size fraction. The 2.5 inch minus fraction drops to the second deck in the vibratory screen. Water from the operation is returned to the Missouri via the trench north of site 13 and 15 on the surface feature map. The second deck in the vibratory screen separates the 1 inch fraction (Appendix A).

The 1 inch plus fraction drops to a rock screw for dewatering and is then conveyed to the 1 inch plus stockpile for sale (A.Q. Cumber, personal communication, 2-31-95). The 1 inch minus fraction drops to the third screen deck.

The third deck in the vibratory screen separates the 3/8 inch fraction. The 3/8 inch overs drop to a conveyor and are transported to a stockpile for sale. The 3/8 minus fraction which includes heavy minerals drops to a trommel for further processing (Photo ROP3).

The trommel separates the heavy mineral fraction from the remainder of the feed. The tails are pushed to a pile (e.g., site 15 on the surface feature map, Appendix A) for sale as borrow or fill. The heavy fraction is dumped to a Knudson bowl for gold recovery. Concentrates from the Knudson bowl are processed using a gold wheel and other hand recovery methods. Grade of material concentrates is uncertain; however, mining claimants have told us (A.Q. Cumber, personal communication, 2-31-95) that gold grade is approximately $2.78 per yard (gold price about $324 per ounce)..

Production Capacity

One of the mining claimants stated in 1992 (Ray Johnson , personal communication, 9-14-92) that he planned to produce approximately 400 to 500 cubic yards per hour at the subject operation. This equates to at least 960,000 cubic yards of material per year for a 300 day work year.

Our examination of the site and equipment condition leads us to believe that this production rate is unrealistic for the Popcorn Shrimp and Yahoo # 1 operation. The production rate here is limited by the capacity of the equipment that is and will be used. The FELs could move this much material working full time during a 24 hour day; however, very little time could be devoted to FEL maintenance. At least one FEL was on blocks for repair on September 19, 1995 (Photo R2P21). It is doubtful that the operators could maintain such a rate.

Similarly, conveyors that need maintenance would not be able to keep up with such a high rate of

production, nor would a Knudsen bowl for the heavy concentrates since it is labor intensive for cleanup and recovery. A 3 deck vibratory screen would also require maintenance and would not be able to keep up with this rate of production unless every variable that affects screen operation were optimized.

Additionally, this rate of production has never been achieved at the subject operation site. Sales of sand and gravel have been sporadic, and no production records are available for gold from the placer deposit.

We estimated in 1992 that a much more reasonable production rate for the deposit and the operation at that time would be 25,000 to 50,000 cubic yards of material per year (83 to 167 cubic yards per day). Based on the current condition of equipment and sporadic production, this level of operation or less is still much more reasonable than 3,200 cubic yards per day.

Equipment Storage

Voluminous equipment is stored at the site in addition to stockpiles of processed material (Table 1). Most of the equipment is stored in the vicinity of the active operation (sites 4, 6, 7, 8, 9, 10, 11, and 12 on the surface feature map, Appendix A) and appears unused. Some of the equipment and materials have been moved from its location near the river in 1992 (and as late as 1-18-95, cf. Photo ROP3 with Photo R2P2) to a new location at site 4 or along the old airstrip at sites 7 and 10. Stored equipment and materials is in various states of repair and operable condition (Table 1).

SURFACE USE DETERMINATION OF MINING CLAIMS

Reasonably Incident Determination

Mining claims located under the General Mining Law cannot be used for any purposes other than prospecting, mining, or processing operations and uses reasonably incident thereto (43 CFR 3712.1 (a). Our work on the Popcorn Shrimp and Yahoo # 1 placer mining claims focused on this determination, which is made up of two parts. First, we addressed whether the current operation can be considered prospecting, mining, or processing for a locatable mineral as intended in the Act of July 23, 1955 (30 U.S.C. 601). Second, we addressed whether other activities occurring on the mining claims constitute uses reasonably incident to prospecting, mining, and processing.

Is the Current Operation Prospecting, Mining, or Processing?

Clearly, a mining operation is being conducted on the Popcorn Shrimp and Yahoo # 1 placer mining claims (Photo R3P6). Operable equipment at site 16 processes material extracted from the mining claims. Additionally, based on our research of surrounding mining districts, the subject mining claims are situated regionally among other deposits of gold-bearing gravels. The mining claimants in this case are processing gravels through equipment designed to extract gold or other heavy metals, among other things. We did not sample gravels on the mining claims to verify whether they actually contain gold; however, even if the gravels do not contain gold, the mining claims are situated in a region that would warrant intensive prospecting for gold. Logically, we presume the mining claimants are either expending money at prospecting, mining, or both.

We note that the operation on the subject claims is set up to process sand and gravel with gold recovered as a byproduct rather than set up to mine gold with sand and gravel as a byproduct. If the operation were set up primarily for the gold, there would be no need to expend money to process the run-of-mine material through the vibratory screen apparatus to remove different size

fractions. The entire run-of-mine material could simply be washed and screened with a trommel or similar circuit and the oversize tails discarded. We did not address prudence of the mining claimants in the operation nor did we address whether the sand and gravel on the subject mining claims is an uncommon variety material. Regardless, the operation still can be considered reasonably incident to prospecting, mining, or processing based on the inferred gold content.

Are Other Activities Reasonably Incident to Prospecting, Mining, or Processing
We saw no direct evidence in our visit to the site on September 19, 1995, that suggests that other types of revenue generating activities are occurring on the Popcorn Shrimp and Yahoo # 1 mining claims. We noted on October 12, 1994, that 5 goats, 12 geese, 6 gryphons, 4 yeti, and a komodo dragon were being kept in pens near the residence; however, all these animals were gone on September 19, 1995. Additionally, a number of vehicles and engines (cf. Table 1) in various states of disrepair are being stored on the subject mining claims. However, we saw no evidence of a vehicle repair business. Presumably, the mining claimants are using the vehicles and parts for the operation.

We did find excess equipment and refuse on the subject mining claims (Table 1), some of which constitutes storage of equipment not reasonably incident to this gold placer mining operation. Some refuse has been at the location of the Popcorn Shrimp and Yahoo # 1 claims for many years, perhaps left over from early prospecting and mining operations at the site. Site 2 on the surface features map illustrates the kind of refuse that has been at the site for many years (Photo R1P2). Additionally, the present mining claimants found refuse on the subject claims when they purchased them (Ray Johnson , personal communication (Jones), September 14, 1992).

Much of the equipment and refuse, however, has been brought to the site in the last few years. The condition of equipment and materials is highly variable; some is useable in this operation and some isn't (Table 1 and Appendix B, Photos). For example, we noted 4 dump trucks (1 without an engine), 22 rotted Front End Loader tires, about 1,660 feet of pipe suitable for use as water line, about 500 square feet of wire screen suitable for screen decks, 13 unmounted engine blocks, 8 single or double axle trailers in various states of disrepair, 24 passenger car bodies in various states of disrepair, 109 rotted passenger car or small truck tires, 615 feet of variably sized angle iron, 2 road graders, 2 travel trailers used to store refuse and unuseable materials, one steam calliope and numerous transmissions, differentials, and other car parts.

A mining operation at any scale requires certain spare parts, and, depending on the innovation of the claimants, much of what would be considered "junk" to a layperson might be very useful for re-engineering equipment. In this case, however, we found 3 types of materials, those that could be operated with maintenance or conceivably could be used in this scale of a placer mining operation, those that are too inoperable or unusable that the liklihood of use is minimal, and those that exist in such quantity (excessive) that the liklihood of use is improbable. For the Popcorn Shrimp and Yahoo #1 placer mining claims, we inventoried the equipment and categorized equipment and materials in each site. Our conclusions of whether the equipment and materials are reasonably incident to this gold/sand and gravel mining operation or reasonable expansion of this operation are based on the condition of the equipment and whether it is excessive for the level of production we now see.

Unnecessary or Undue Degradation
Section 302 of the Federal Land Policy and Management Act of 1976 (FLPMA) requires that "in managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands." 43 U.S.C. § 1732(b)

(1988). The surface management regulations at 43 CFR Subpart 3809, are based on this and other statutory authority. The 3809 regulations define "unnecessary or undue degradation" as "surface disturbance greater then what would normally result when an activity is being accomplished by a prudent operator in usual, customary, and proficient operations of similar character and taking into consideration the effects of operations on other resources and land uses, including those resources and uses outside the area of operations. Failure to initiate and complete reasonable mitigation measures, including reclamation of disturbed areas or creation of a nuisance may constitute unnecessary or undue degradation. Failure to comply with applicable environmental protection statutes and regulations thereunder will constitute unnecessary or undue degradation." 43 CFR 3809.05(k).

It is our opinion that the operation is in noncompliance with 3809.05(k) and is causing unnecessary or undue degradation for the following reasons:

1) The mining claimant is storing numerous inoperable items (Table 1) that are not reasonably incidental to mining even though some cannibalized parts from these items may have potential utility.

2) There is an accumulation of an excessive quantities of parts and materials stored in a disorganized manner on the surface of the unpatented mining claims causing a surface disturbance greater than would normally result when mining is performed by a prudent operator in usual, customary, and proficient operations of similar character. A prudent operator would not retain such a quantity of materials on the claim.

3) The excess parts and scrap constitute a nuisance and are therefore determined to create unnecessary or undue degradation, by failure to maintain structures, equipment, and other facilities in a safe and orderly manner.

4) The area encompassed by the mining claims shows signs of leakage of petroleum products and may violate water quality and solid waste disposal standards.

5) The items found in the flood plain as well as sediment from on-site disturbances, may be transported downstream during high flow of the Missouri.

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APPENDIX B - SURFACE FEATURES MAP

APPENDIX B - PHOTOGRAPHS