

Storm Water Pollution Prevention Plan

for:

Emerald Creek Garnet
59652 Highway 3
Fernwood, Idaho 83830

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- Attachment A – General Location Map
- Attachment B – Site Maps
- Attachment C – 2015 MSGP, CFR's, NOI's
- Attachment D – Inspection Reports and Monitoring Results, Training Logs
- Attachment E – SPCC
- Attachment F – Procedures for Inspections and Monitoring

SECTION 1: FACILITY DESCRIPTION AND CONTACT INFORMATION

1.1 Emerald Creek Garnet Facilities Information

Facility Information

Name of Facility: Emerald Creek Garnet

Street: 59652 Highway 3

City: Fernwood State: Idaho ZIP Code: 83830

County or Similar Subdivision: Benewah

Permit Tracking Number: IDR050000 (if covered under a previous permit)

Latitude/Longitude (Use **one** of three possible formats, and specify method)

Site:	Latitude:	Longitude:
Mill/Office/Cat Shop	47° 04' 17" N (degrees, minutes, seconds)	116° 19' 39" W (degrees, minutes, seconds)
Emerald Creek Jig Plant (ECJP)	47° 02' 03" N (degrees, minutes, seconds)	116° 19' 29" W (degrees, minutes, seconds)
306	47° 05' 11" N (degrees, minutes, seconds)	116° 22' 47" W (degrees, minutes, seconds)
307	47° 03' 18" N (degrees, minutes, seconds)	116° 26' 23" W (degrees, minutes, seconds)
301	47° 02' 29" N (degrees, minutes, seconds)	116° 19' 24" W (degrees, minutes, seconds)
322	47° 04' 28" N (degrees, minutes, seconds)	116° 20' 08" W (degrees, minutes, seconds)
329 (288)	47° 01' 41" N (degrees, minutes, seconds)	116° 19' 50" W (degrees, minutes, seconds)

Method for determining latitude/longitude (check one):

- USGS topographic map (specify scale: _____) EPA Web site GPS
 Other (please specify): Google Earth _____

Is the facility located in Indian Country? Yes No

If yes, name of Reservation, or if not part of a Reservation, indicate "not applicable." _____

Is this facility considered a Federal Facility? Yes No

Estimated area of industrial activity at site exposed to storm water: 8 acres (Mill/Office/Cat Shop)

Discharge Information

Does this facility discharge stormwater into an MS4? Yes No

If yes, name of MS4 operator: N/A

Name(s) of water(s) that receive storm water from your facility: St. Maries River, Carpenter Creek, Emerald Creek

Are any of your discharges directly into any segment of an "impaired" water? Yes No

If Yes, identify name of the impaired water (and segment, if applicable): St. Maries River, Carpenter Creek, Emerald Creek

Identify the pollutant(s) causing the impairment: Sediment, Temperature

For pollutants identified, which do you have reason to believe will be present in your discharge?
Possibly Sediment

For pollutants identified, which have a completed TMDL? Sediment, Temperature

Do you discharge into a receiving water designated as a Tier 2 (or Tier 2.5) water? Yes No

Are any of your stormwater discharges subject to effluent guidelines? Yes No

If Yes, which guidelines apply? Mine Dewatering at sand and gravel operations

Primary SIC Code or 2-letter Activity Code: 1499, 1446 (refer to Appendix D of the 2008 MSGP)

Identify your applicable sector and subsector: J, J1, J2, P, AB

1.2 Contact Information/Responsible Parties

Facility Operator (s):

Name: Emerald Creek Garnet, LTD./Opta Minerals Inc.

Address: PO Box 190

City, State, Zip Code: Fernwood, Idaho, 83830
Telephone Number: 208-245-2096
Email address: ekok@optaminerals.com
Fax number: 208-245-5309

Facility Owner (s):

Name: Emerald Creek Garnet, LTD./Opta Minerals Inc.
Address: PO Box 190
City, State, Zip Code: Fernwood, Idaho, 83830
Telephone Number: 208-245-2096

SWPPP Contact:

Name: Jennifer Dickison or Ed Kok
Telephone number: 208-245-2096
Email address: jdickison@optaminerals.com , ekok@optaminerals.com
Fax number: 208-245-5309

1.3 Storm water Pollution Prevention Team

Staff Names	Individual Responsibilities
Jennifer Dickison	SWPPP Certification
Jennifer Dickison	SWPPP Oversight and BMP Certification
Jennifer Dickison	SWPPP Compliance, Inspections, Updates, and Implementation
Sandy Stamper	SWPPP Office Manager
Mark Lewis	SWPPP Field Manager
Liz Lamie	Monitoring, Sampling, Data Processing

1.4 Activities at Emerald Creek Garnet Facilities

The Mill/Office facility is a 9.2 acre complex of industrial buildings and areas that support off-site mining activities. Industrial activities occur in the Mill, Storage Facilities, Lab, Office, Cat Shop, Fuel/Lubricant Sheds, and the Yard. The Emerald Creek Jig Plant is located off the main site up Emerald Creek and is used occasionally to remove excess sediments from the garnet sands. In the field, pre-mining activities, actual mining activities, reclamation, and exploration occur.

1.4.1 Mill Activities

The mill is located at the main Emerald Creek Garnet Facility adjacent to the office building. Garnet concentrate from an active mining area is hauled in a dump truck from the field and unloaded at the mill by backing up into a covered area and dumping the garnet sands onto a concrete slab. Occasionally garnet sand is stored on an uncovered portion of the concrete slab for short durations. Garnet sand is loaded into hoppers with a front loader. The sands are then processed through the mill using screens, high

temperature ovens, and roll crushers. Then the garnet sand is fed into bags and stored in the mill prior to shipping. Bagged garnet is then loaded onto trucks on the west end of the mill using a fork lift.

Three propane-powered forklifts are used to transport bagged garnet. All mechanical equipment is electrically powered. Motors, bearings, pulleys, etc. are routinely maintained on-site. Waste sand from crushing is stored in the Yard until it is recycled for reclamation. Trash generated by mill workers is collected in garbage cans and plastic bags and is emptied into covered dumpsters. The loader is fueled on-site at the fuel station.

Potential pollutants include oil, grease and fuel from leaks from trucks coming to haul garnet for purchase, and sediment from the uncovered portion of the concrete slab.

1.4.2 Office/Lab Activities

For purposes of this document, the office/lab includes the caretaker's house. The office and lab occupy two connected buildings. These areas include offices for management and administration, an assay lab, a truck parts inventory area, housekeeping supplies, storage area for chemicals, and two toilet/wash rooms. These facilities, along with the caretaker's house (and the cat shop, see section 1.4.3) have a common septic tank and drain field.

The office area is a daily use area for full time employees. It serves as a management and administrative center for the daily operations of all field activities, as well as cat shop, lab, and mill activities. All records are kept here, and in corporate offices in Coeur d'Alene, Idaho. The caretaker's house is a residence for one employee.

The lab is used to assay exploration and production test samples from the field and mill. All activities and equipment are located inside.

Attached to the lab is a vehicle wash pad. This is a concrete pad with a high pressure, hot water spraying system. Detergents and degreasers are not used in this wash area. The wash water drains into a concrete water holding structure that is 8' deep with an open top to promote evaporation. The water in this structure is treated with cleansing bacteria and microbes to rid of potential pollutants.

Potential pollutant sources include litter from dumpsters and sediment from the wash pad.

1.4.3 Cat Shop Activities

The cat shop provides maintenance and repair services for ECG's larger equipment, including washers, excavators, and dozers. The main building has a concrete floor and a covered outside storage area which has a dirt floor. A forklift is used and stored in the covered outdoor portion of the cat shop along with motors, engines, generators, hydraulic parts, and other parts that are stored on wooden pallets. Fluids are left in this equipment to maintain seal integrity and prevent rust. The cat shop also provides maintenance and repair services for ECG's pick-ups, dump trucks, and smaller heavy equipment.

Fifty-five gallon drums of oil and lubricants are used inside the cat shop. Each drum has its own containment pad with wheels for portability. Small quantities of other chemicals, including solvents,

degreasers, brake fluid, hydraulic fluid, etc. are used here. These items are listed in the significant materials' inventory in Attachment C and in the front of the MSDS.

Spill containment and clean-up equipment is kept in the cat shop.

A covered dumpster is located outside next to the cat shop. Trash (excluding lubricant waste) from the cat shop and parking area are disposed here. Trash is collected weekly by Benewah County. Long-term lubricant storage occurs in a corner of the Cat Shop.

Lubricants are stored on an elevated platform, under cover in a corner of the Cat Shop. Only unopened and completely emptied containers are stored here. Open, in-use containers are located in the cat shop where containment is provided. Rotation of stock is the responsibility of the dealer. All fuel, oil and lubricant is supplied by St. Joe Oil located at 1040 Railroad Avenue, St. Maries, Id. 83861. The only activities that take place at the lubricant storage area are adding and removing drums, either by the dealer or by qualified facility personnel.

Potential pollutants include residues from empty 55 gallon drums, oil, grease and fuel residue from equipment leaks or spills, residues from parts stored outside, residues from lubricants and solvents, and litter from the dumpsters.

1.4.4 Storage Facility Activities

Attached to the main office is a large storage area where excess bagged garnet and other large items that need protection from the elements are stored. Typically a fork lift is used to transport storage items in and out of the building.

The Mill site also has 7 external storage containers that house field equipment such as shovels and fence, and exploration samples. Exploration samples are kept on pallets and require a forklift to move them if needed.

Potential pollutants include oil, grease and fuel residues from equipment used to transport materials.

1.4.5 Fuel Storage Activities

Fuel is stored only at the Fuel Shed located in the 'parking lot' of the mill/office site. Fuels are provided by St. Joe Oil, St. Maries, Idaho. The dealer owns the pumps and tanks, and is responsible for the safety and serviceability of this equipment. The Fuel Shed is a covered building with a concrete floor and concrete sides. The shed provides containment for any spill inside the shed (See attached SPCC Plan, section III for specification details).

ECG's fleet of pick-ups and dump trucks take on fuel at the Fuel Shed. The front loader used at the mill also fuels there. Fueling takes place in an uncovered area on a small concrete pad. The Fuel Shed is kept locked, with keys available in the office building during working hours (See attached SPCC Plan, Section IV for security measures).

Potential pollutant sources include fuel from leaks and spills.

1.4.6 Yard Activities

The Yard includes those areas of the mill/office site outside the buildings. This area includes parking areas for personal and company vehicles, a road network, a salvage area that stores old equipment, and a waste sand storage area. The yard also has a 26,000 square foot area that has been graveled and is used for short-term storage of bagged garnet. Overflow bagged garnet is stored on wooden pallets in this area.

1.4.6.1 Outdoor Parking and Roads

The outdoor parking areas and roads are graveled surfaces used by ECG employees for daily ingress-egress and short-term parking of personal and work vehicles. Freight trucks use the road network, and the public occasionally visits. Neither is used for long-term parking or storage.

Potential pollutants include dust from traffic, oil, grease, and fuel from car and truck leaks, and litter.

1.4.6.2 Salvage Areas

There is one outdoor salvage area in the Yard used for parts storage that has had all oils and fluids removed. This area also contains short-term storage for tires and other rubber products. They are stored here until enough are present to ship to a recycler. Fork lifts are used to transport salvage area parts from one area to another.

Potential pollutants include residues from parts and salvage equipment and oil, grease and fuel from equipment leaks during transportation of parts and equipment.

1.4.6.3 Waste Sand Storage

Waste sand from crushing is stockpiled in the Yard using heavy equipment to transport the waste. This material is stored on the ground and is contained within the facility berm. The material is eventually incorporated into waste sand from the jig plants and hauled to reclamation sites.

Potential pollutants include oil, grease and fuel from equipment leaks, and sediment from the waste sand stockpile.

1.4.6.4 Trash Burning Area

Burnable trash, primarily sand bags and wooden pallets from storage areas and warehouses is collected here and burned under permit.

Potential pollutants would be ash that could be transported by wind or floodwater.

1.4.7 Field Pre-Mining Activities

Using the mine plan layout, pre-mining activities begin by flagging and painting the unit designated to be mined. Temporary roads, 30' set-back from streams, areas to be logged if needed, siltation berms, interceptor and diversion channels, siltation pond locations and the area to be stripped are clearly marked.

Pre-mining equipment may include loaders, skidders, dozers, excavators, log trucks, dump trucks, and wood processors depending on the site.

Pre-mining construction activities include: extending or improving a temporary road to provide access to the mining unit, logging and removing woody vegetation if needed, constructing siltation berms, siltation ponds, and diversion or interceptor channels, stripping and stockpiling topsoil and overburden, and seeding exposed areas.

Fueling of the equipment is done using a fuel truck. The fuel truck fills up from an above ground storage container located under cover in a storage shed located in the “parking lot” of the mill/office site.

Potential pollutant sources include; oil, grease, and fuel from leaks or spills from the large equipment used, sediment from exposed areas, spills during fueling, and litter from personnel.

1.4.8 Field Mining Activities

Mining activities begin after a site has been prepared. An excavator is used to remove the garnet sand from the active mine unit. A concentration plant is used to separate the waste from the garnet, and a dump truck is used to transport the garnet to the jig plant and mill.

Fueling of the equipment is done using a fuel truck. The fuel truck fills up from an above ground storage container located under cover in a storage shed located in the “parking lot” of the mill/office site.

Mining typically occurs from April through November, with activities shut down during the months when freezing weather occurs. Mining sites are either reclaimed prior to shut down or have controls put in to stabilize the area for winter.

Potential pollutant sources include; oil, grease, and fuel from leaks or spills from the large equipment used, spills during fueling, sediment from exposed areas during a flood event that crosses the siltation berm, and litter from personnel.

1.4.8.1 List of Current Field Mine Sites

a. DMP 301

DMP 301 is currently being mined on the west side of Emerald Creek. The approximate mined acreage for 2012 is 13 acres, and the total approximate disturbed acreage is 20 acres. Some BMP's include a vegetated siltation berm surrounding the site and a large buffer zone that is 440'-880' from Emerald Creek. The outfall at this site is labeled outfall 301 and would consist of overland runoff and an event over-topping the vegetated siltation berm. See the detailed site map in appendix B for more information on water flow directions, BMP locations, and outfall locations.

1.4.9 Emerald Creek Jig Plant Activities

The jig plant is a separate site located up Emerald Creek used to wash the garnet concentrate. A dump truck hauls garnet concentrate to the jig plant and dumps the load onto an un-covered concrete slab. A loader that sits on the slab loads the garnet concentrate into a bin that feeds the jig plant screw. From the

screw the material is fed into a bin that feeds into a dump truck. From there the dump truck hauls the garnet concentrate to the mill.

Occasionally product from the mill is hauled to the jig plant in bags on a haul truck to be washed. The bagged material is dumped into a bin using propane powered fork-lifts, ran through the wash system, re-bagged, and hauled back to the mill.

Ore wash water from the jig plant is discharged into a siltation pond that is surrounded by a vegetated buffer strip and a vegetated siltation berm.

The loader is fueled using a mobile fuel truck. All garbage is hauled off-site and disposed of at the Mill/Office site.

The Jig Plant is not used full time, but rather on an as needed basis.

Potential pollutants include sediment from garnet stockpiled on the slab, sediment from waste water, oil and fuel from loader and haul truck leaks, and fuel spills from mobile fueling of the loader. See the detailed site map in appendix B for more information on water flow directions, BMP locations, and outfall locations.

1.4.10 Field Reclamation Activities

Typically multiple sites are mined and reclaimed throughout the year. Emerald Creek Garnet practices concurrent mining and reclamation, which keeps exposed mining areas at a minimum. Reclamation is completed during the drier months when there is little or no rain fall. Equipment used during reclamation typically includes hydro seeders, dozers, excavators, dump trucks, and irrigation equipment.

Once a mining unit has been completely mined, reclamation will begin by re-grading the stockpiled overburden and re-contouring the floodplain. At this stage, the unit is said to be in the early stages of reclamation. During mid-stage reclamation, stockpiled topsoil is re-spread over the area and seed is applied. The siltation berm and interceptor channel/siltation ponds are kept in place during the first year of reclamation to protect topsoil and seeded areas. Other activities include water seeded areas from mining panels, oxbow habitat excavation, woody vegetation and straw bale placement, and fencing to keep out range animals.

During the second year of reclamation, the siltation berms and interceptor channels/ siltation ponds are removed and any exposed areas are seeded and irrigated. After this has been completed, the site is fully reclaimed but still needs to be monitored. Vegetation monitoring begins after mid-stage reclamation is complete and continues for five years. Equipment used during reclamation is fueled using a mobile fuel truck. All garbage is hauled off-site and disposed of at the Mill/Office site.

Potential pollutants include sediment from exposed areas or flood events crossing the siltation berm, oil, grease and fuel from equipment spills and leaks, fuel from fueling activities, sediment from stream re-location bank erosion, and garbage from personnel.

1.4.10.1 List of Reclamation Sites

- a. DMP 301 Aspen

Site 301 is located approximately three miles up the main Emerald Creek Drainage along Emerald Creek Road. Approximately 5 acres of the site were reclaimed in 2012 and are currently in the mid-stages of reclamation. The area has been re-graded to contour and the topsoil replaced, but has not yet been hydro-seeded. There is no outfall at this location. See the detailed site map in appendix B for information on water flow directions, BMP locations, and storm water monitoring locations.

b. 307 Field

Site 307 is located approximately 6 miles up the Big Carpenter Drainage, and is approximately 45 acres in size. The outfall at this location is labeled outfall 307, is substantially identical to outfall 306, and would result from overland runoff creating sheet flow across the site. Ten acres of site 307 are in the mid-stage reclamation where vegetation is established, but further reclamation work is planned in 2013. Approximately 35 acres of the site have been fully reclaimed and will continue to be monitored. See the detailed site map in appendix B for information on water flow directions, BMP locations, and outfall locations.

1. Outfall 307 is a substantially identical outfall to outfall 306. Both sites are located along Big Carpenter Creek and outfall 307 is approximately 4.5 miles southwest of outfall 306. Both areas were mined with similar techniques around the same time interval, and both were reclaimed with similar techniques. Both areas also have further reclamation work that is planned to be completed throughout 2012 and 2013. Outfalls 306 and 307 also have similar control measures and a runoff coefficient below 40%. For more information on control measures and industrial activities at field sites, refer to section 3.

c. 306 Field

Site 306 is located at the junction of the old county road and Carpenter Creek. The site is approximately 50 acres in size. The outfall at this location is labeled outfall 306 (substantially identical to outfall 307) and would result from overland runoff creating sheet flow across the site. 30 acres of the site are in the mid-stages of reclamation where the vegetation is established but further reclamation work is planned during 2012 and 2013. The remaining 20 acres are fully reclaimed and continue to be monitored. See the detailed site map in appendix B for information on water flow directions, BMP locations, and outfall locations.

d. DMP 329

Site DMP 329 is located just south of the Emerald Creek Jig Plant approximately 3.3 miles down Emerald Creek Road at the confluence of the west fork and east fork of Emerald Creek. The entire site is approximately 6 acres. Out of these 6 acres, approximately 3.7 acres were mined in 2011-2012 and are currently in the mid-stages of reclamation where the vegetation is being established. The remaining 2.3 acres are currently in the early stages of reclamation where the floodplain is being re-contoured. The outfall at this location is labeled outfall 329 and would result from overland runoff and an event overtopping the vegetated siltation berm. See the detailed site map in appendix B for information on water flow directions, BMP locations, and outfall locations.

e. DMP 322

Site 322 is located adjacent to the Office/Mill/Catshop complex, and extends northwest for approximately 1 mile along Highway 3. Four portions of the site were mined recently in 2011 and 2012. These portions total approximately 20 acres and are located along the St. Maries River. All of these portions are in the mid-stages of reclamation, have been re-graded to contour, the topsoil has been replaced, and vegetation is currently being established. The outfall on DMP 322 is labeled

outfall 322 and would result from overland runoff and an event overtopping the vegetated siltation berm. See the detailed site map in appendix B for information on water flow directions, BMP locations, and outfall locations.

1.4.11 Exploration Activities

Exploration activities typically occur during the dry months when the snow is gone and weather is favorable. Activities and disturbance during exploration is limited to small areas and may include temporary road construction, existing road improvement, drilling, trenching, stream sampling, hand auger sampling, geophysical surveying, and geologic mapping.

During a drilling program equipment usually will include a wheel or track mounted drill-rig, a water truck, and possibly a dozer or excavator for road construction or improvement. Trenching is generally accomplished using an excavator. Stream sampling, hand auger sampling, geophysical surveying, and geologic mapping are all extremely low impact forms of exploration and generally only require a vehicle and hand equipment.

All exploration sites are typically only active for one day to five days, and reclamation is immediate. These sites are technically in-active and un-staffed are exempt from monitoring and inspections. Where significant disturbance and long-term exploration activities occur monitoring and inspections will be completed.

Fueling is usually done off-site, but occasionally may require a mobile fuel truck to fuel large equipment during extended periods of exploration. All garbage is hauled to the Mill/Office site for disposal.

Potential pollutants include minor sediment from exposed areas, oil, fuel and grease from equipment spills and leaks, fuel spills from mobile fueling activities, and garbage from personnel.

1.5 General Location Map

See Attachment A located in the SWPPP binder.

1.6 Site Maps

See Attachment B located in the SWPPP binder.

SECTION 2: POTENTIAL POLLUTANT SOURCES

2.1 Industrial Activity and Associated Pollutants

Industrial Activity	Associated Pollutants
Material transport using heavy equipment	Oil, Grease, Fuel, Battery Acid, Dust

Equipment outdoor parking and storage	Oil, Grease, Fuel, Battery Acid
Trash burning	Ash
Garbage disposal in dumpsters	Litter
Car, dump truck, work truck, and semi-truck travel on graveled roads	Dust, Sediment, Oil, Grease, Fuel, Battery Acid
Waste sand stockpiling	Sediment, Oil, Grease, Fuel, Battery Acid
Salvage material outdoor storage	Oil, Grease, Fuel,
Fueling equipment and vehicles	Diesel, Gasoline
Equipment and vehicle maintenance	Oil, Grease, Fuel, Battery Acid
Equipment and vehicle washing	Sediment, Oil, Grease, Fuel, Battery Acid
Access road construction	Sediment, Oil, Grease, Fuel, Battery Acid
Stream re-location	Sediment, Oil, Grease, Fuel, Battery Acid
Topsoil/Overburden stockpiling	Sediment, Oil, Grease, Fuel, Battery Acid
Siltation berm construction	Sediment, Oil, Grease, Fuel, Battery Acid
Diversion/Interceptor channel construction	Sediment, Oil, Grease, Fuel, Battery Acid
Siltation pond construction	Sediment, Oil, Grease, Fuel, Battery Acid
Timber removal	Sediment, Oil, Grease, Fuel, Battery Acid
Ore removal and transport	Sediment, Oil, Grease, Fuel, Battery Acid
Ore separation in the field	Sediment, Oil, Grease, Fuel, Battery Acid
Seeding and fertilizing	Fertilizer
Reclamation of mining sites	Sediment, Oil, Grease, Fuel, Battery Acid
Jig Plant ore washing	Sediment, Oil, Grease, Fuel, Battery Acid

2.2 Spills and Leaks

2.2.1 Mill/ Office/ Cat Shop/ Fueling Area

The fueling station located at the main facility is a covered building that houses three above ground storage tanks. Diesel is stored in two 3000 gallon tanks and gasoline is stored in one 500 gallon tank. The tanks sit within the building on a concrete pad with sidewalls. Any leaks or spills within the building will be contained within the building (See SPCC Plan section III.2 Table G4).

This fueling station has typical gas-station type pumps that record how many gallons are pumped in a session. All equipment located at the main facility and all pickup trucks use this station. Spills could occur outside the fuel shed when fueling.

All spills or leaks from this area could possibly discharge to outfall #1.

2.2.2 Outside Cat Shop/ Lubricant Storage Area

On the north side of the Cat Shop, 55 gallon drums of un-opened containers are stored on a covered platform with rails. Miscellaneous used parts and equipment are stored outside the Cat Shop in covered,

yet open areas and outside uncovered. Solvents, degreasers, oil, anti-freeze, and lubricants are stored inside the Cat Shop.

Spills and leaks could potentially occur in these areas, although only spills and leaks in the outside areas could potentially discharge to outfall #1.

2.2.3 Outdoor Loading Areas at Mill and Access Roads

The loading area outside the Mill on the west side provides access for semi-trucks to have garnet loaded for transport. All vehicles use the same access roads from State Highway 3 to the Mill. Any of these areas could be exposed to leaks if a semi-truck or service vehicle were leaking. All spills or leaks from this area could possibly discharge to outfall #1.

2.2.4 Salvage Yard

The salvage yard is an outdoor area used to store excess parts that have had the waste fluids removed. Residues from these parts could potentially leak out when exposed to storm water. All spills or leaks from this area could possibly discharge to outfall #1.

2.2.5 Jig Plant

Since no products are stored at the Jig Plant, only the access roads and outdoor loading area could potentially be exposed to leaks or spills. Any leaks or spills could potentially discharge to outfall #2.

2.2.6 Pre-mining, Mining, and Reclamation Sites

Pre-mining, mining, and reclamation activities require large equipment during operations. At any site there is the potential for large equipment to leak or spill fluids. A mobile fuel truck is used to fuel the equipment. Spills or leaks could occur during fueling.

See Attachment B for a complete list of all active sites and site maps showing potential outfalls.

2.2.7 Exploration Sites

Occasionally exploration activities occur. Activities that have the potential for leaks or spills include drilling, and trenching where large equipment is used, and general driving activities.

Areas of Site Where Potential Spills/Leaks Could Occur

Location	Outfalls	Outfall Type
Fueling Area	Outfall #1	Outfall would result from overland runoff and a flood event overtopping the pond and berm.
Outside Cat Shop/Lubricant Storage Area		
Outdoor Loading Areas At Mill		
Parking Area/Roads		
Salvage Yard		
Emerald Creek Jig Plant	Outfall #2	Flood event travels through culvert and exits the site

Outfall 306	Outfall 306 (and substantially identical Outfall 307)	Sheet Flow
301 Field	Outfall 301	Outfall would result from overland runoff and a flood event overtopping the vegetated berm
329 Field	Outfall 329	
322 Field	Outfall 322	
<i>7 total outfalls</i>		

For specific outfall sampling locations for each site, refer to the site maps in attachment B.

Description of Past Spills/Leaks

Date	Description	Outfalls
N/A	N/A	N/A

2.3 Non-Storm water Discharges Documentation

All discharges are storm water related.

2.4 Sampling Data Summary

Storm water monitoring data has been collected for Emerald Creek Garnet facilities that were active during coverage of the 2000 MSGP.

Benchmark monitoring is done quarterly. Samples are collected and sent to an outside lab to be analyzed for TSS, and Nitrate-Nitrite. For sector J, benchmark monitoring is required for TSS (100 mg/L max) and Nitrate-Nitrite (0.68 mg/L max).

Numeric effluent limits monitoring is done biannually. The samples collected are sent to an outside lab to be analyzed for TSS and are analyzed at the in-house lab for pH. For sector J, the effluent limit for TSS is 45 mg/L, daily maximum, and the effluent limit for pH is 6.0-9.0.

Impaired waters monitoring is done annually and samples are tested at an outside lab for TSS. Based on the TMDL report, the impaired waters value must not exceed 30 mg/L, daily maximum.

Due to dry weather during the 3rd quarter and freezing weather during the 4th quarter, some samples are taken during the same quarter. NCA labs and Test America are used for the outside testing.

Visual quarterly samples were also collected for all active sites. These samples were monitored visually for color, odor, clarity, floating solids, settled solids, foam, oil sheen and any other noticeable parameter.

Copies of the monitoring data are kept filed with the current SWPPP.

SECTION 3: STORMWATER CONTROL MEASURES

3.1 *Minimize Exposure*

In order to minimize exposure to storm water, ECG uses the BMP's described below.

3.1.1 Mill/Office Building/Cat Shop/Jig Plant

At the main mill facility all potential pollutants such as oil and solvents are kept indoors or under covered areas. When parts are placed out in the salvage yard, all waste fluids are removed prior to outdoor storage. Outdoor dumpsters have lids to prevent water from entering them. Sediment transport is controlled using gravel on access roads and vegetation on slopes and open areas.

3.1.2 Field Sites

In the field exposure to storm water is minimized by seeding siltation berms to create a vegetated cover and removing topsoil in increments as needed to mine rather than stripping an entire site. Also, no oil, lubricant, gasoline, or hazardous materials are stored on-site (other than what is in the on-site equipment).

Open containers of daily use lubricants are stored under cover. Shut down protocol minimizes the exposure of field equipment to floodwaters. Field activities are shut down when flood forecast centers predict a flood event in the basins that activities occur. In this case, pre-mining activities are temporarily suspended and all equipment is moved out of the mining unit to high ground that is not flood prone. Field activities remain suspended until the flood has passed. BMP construction and soil stripping for BMP construction are conducted during the drier months to avoid discharge potential. Temporary roads are constructed during the drier months or when ground is frozen to avoid discharge potential.

Field practices for eliminating suspended sediments in waters includes building a series of settling ponds. In addition to suspended sediments dropping from solution over time and distance through the series of settling ponds, coagulants (Polyquaternary Amine Chloride) are added in controlled increments according to set BMP's to further eliminate potential suspended sediments.

3.2 *Good Housekeeping*

3.2.1 Mill/Office/Cat Shop/Jig Plant

The main facility is cleaned on a monthly basis or more frequently if needed. House keeping activities include, sweeping/washing concrete pads, removing waste oils on the property by qualified personnel as described in the SPCC and adding gravel to any access road on site in which standing water develops.

A covered dumpster is located next to the Office. Trash and other waste from the lab, office, mill, and caretaker's cabin are disposed here. Trash is collected weekly by Benewah County. Excess wood is burned on-site during periods when burning is permitted.

Good housekeeping is also practiced on site by keeping potential pollutants where they are not exposed to storm water. All hydrocarbon products are stored in covered areas. Above ground tanks are inside locked buildings within concrete basins.

Routine Facility Inspections are conducted monthly at active sites. All areas of activities are inspected, including fuel tanks, drum and containers.

3.2.2 Field Sites

No dumpsters are present in field areas. Trash is hauled to the Mill/Office Site for disposal. No significant materials are stored on-site. Excavators and dozers are fueled by a mobile fuel truck. Dump Trucks are fueled at the Mill/Office Site. Spill containment and clean-up equipment is kept in the field mechanics' trucks.

3.3 Maintenance

Mining Equipment:

1. Major maintenance and repair of equipment will be performed regularly at the main Mill/Office Facility in the Cat Shop.
2. On-site equipment maintenance will be limited to re-fueling and minor servicing activities by user personnel, except when further repairs are required due to vehicle breakdown.
3. Operators will be required to inspect their equipment for leaks. Leaks will be reported to maintenance personnel.
4. ECG personnel will inspect equipment and the site for signs of leaks during each routine facility inspection.
5. A Daily Walk Around Inspection is required for all mining equipment. These documents are turned into the main office.

Passenger Vehicles:

1. Major maintenance and repair of equipment will be performed regularly at the main Mill/Office Facility in the Cat Shop.
2. Daily walk around inspection sheets are kept in all vehicles and are turned into the main office.

Control Measures:

1. All BMP's will be inspected on a regular basis during routine facility inspections to ensure that they are functioning properly.
2. Any repairs to BMP's will be made in a timely manner.

3.4 Spill Prevention and Response

3.4.1 Procedures for Labeling Containers

All containers will be labeled according to the product contained. These procedures will be implemented at all facilities including the Mill/Office, Cat Shop, and Field sites.

3.4.2 Preventative Measures

1. Keep all potential contaminants under cover.
2. Provide secondary containment for all potential contaminants.
3. Inspect and repair equipment routinely for leaks or damage.
4. Remove contaminants from machinery indoors.
5. Provide employee training.

3.4.3 Procedures for Containment

Containment procedures will be implemented at all facilities including the Mill/Office, Cat shop, and Field sites.

a) Small Spills or Leaks

For small spills or leaks, immediately shut off the source or remove the equipment into a contained location, such as inside the Cat Shop. Apply absorbent pads to the spill and remove any contaminated soil. For very small spills, microbes or enzymes may be used.

b) Larger Spills or leaks

The key to preventing a large spill or leak from spreading is immediate containment of any fluids and shut down of the source. Once the source has been stopped, immediately build an earthen berm completely around the spill that is high enough to contain any running water and the spilled fluid. Begin clean-up immediately by applying booms and absorbent pads. Contaminated soil must be excavated and disposed of.

3.4.4 Procedures for Notification

Notification procedures will be implemented at all facilities including the Mill/Office, Cat Shop, and Field sites.

A detailed SPCC (Spill Prevention Control and Countermeasure plan) has been prepared for a Tier I facility for Emerald Creek Garnet. A copy of the SPCC will be kept with the SWPPP and shared with employees during annual training. This plan is included in Appendix E of the SWPPP and outlines the procedures for preventing spills and the notification procedures in the event of a spill.

3.5 Erosion and Sediment Controls

Vegetated Berm

BMP Description: Vegetated berms are used at the main facility and at field sites to prevent flood waters from entering any site and to keep exposed storm water from leaving the site.

Silt Fence/Straw Bales

BMP Description: Silt fence and straw bales are used in areas where the gradient is shallow and exposed storm water can be trapped long enough to drop sediment.

Graveled Roads

BMP Description: Highly traveled roads are graveled and graded to keep sediment from traveling during storm events.

Vegetated Buffers

BMP Description: The main facility and the Jig Plant both have a wide vegetated buffer between the site and the creek or river. Field sites have a 30' setback from the creek or river that is vegetated.

3.6 Management of Runoff

Top-soiling and Seeding

BMP Description: Topsoil and seeding all finalized pit areas will reduce runoff by establishing vegetation that slows runoff velocities and enhances infiltration.

Siltation Berm

BMP Description: Siltation berms are constructed along the outside of the mining units to keep water from flowing out and to keep flood waters from coming into the mining unit. Only a worst case flood would top the berm and flood the mine unit, or excessive rainfall buildup within the unit would top the berm.

Vegetated Buffer Strip

BMP Description: Natural vegetated buffer strips are utilized at this facility for sediment removal and infiltration. A 30' offset is used along any stream.

Sedimentation Basin

BMP Description: Sedimentation basins are constructed within the mine panel to capture any runoff within the mine unit. This allows sediment to settle and the water to infiltrate into the ground.

Diversion Channels and Interceptor Channels

BMP Description: Diversion and Interceptor channels are used to either intercept run-on from intermittent channels or divert overland runoff from the mining unit.

3.7 Salt Storage Piles or Piles Containing Salt

No salt storage piles are used at any site.

3.8 MSGP Sector-Specific Non-Numeric Effluent Limits

Refer to Part 8, Subpart J of the MSGP for the following permit requirements.

Technology Based Effluent Limits for Clearing, Grading and Excavation Activities. Refer to subsection 8.J.4.

8.J.4.1 Management Practices for Clearing, Grading and Excavation Activities

The requirements of this section are addressed utilizing the measures described in SWPPP Section 3: Storm water Control Measures.

8.J.4.2 Inspection of Clearing, Grading and Excavation Activities

Frequency: Inspections will be performed every 14 calendar days and within 24 hours of a single storm event of ½" or greater. Inspections will be reduced to once a month during dry weather when runoff is unlikely to occur. The frequency may be altered for stabilized or winter conditions as described in 8.J.4.2.1.

Locations: All areas of the site disturbed by excavation activities will be included in the inspection.

Reports: Inspection reports will be completed for each inspection, according to the requirements of MGSP Part 4.1 at a minimum. All reports will be kept in the SWPPP Binder in attachment D.

8.J.4.3 Requirements for Cessation of Clearing, Grading and Excavation Activities

Inspections and maintenance must continue until final stabilization or commencement of active mining and temporary stabilization is complete. Temporary or final stabilization will be completed in accordance with 8.J.4.3.2 or 8.J.4.3.3, respectively.

Additional Technology-Based Effluent Limits: Refer to sub-section 8.J.5.

1. Employee Training – see Section 3.9 of this SWPPP
2. Storm water Controls – see Sections 3.2 through 3.6 of this SWPPP
3. Capping – not needed.
4. Treatment – An inert coagulant may be used to settle suspended sediments in sedimentation ponds.
5. Certification of Discharge Testing – not required (no mine dewatering activities on site).

Additional SWPPP Requirements: Refer to Section 8.J.6.

1. Nature of Industrial Activities – see SWPPP Sections 1.4, 1.5 and 2.1.
2. Site Map – see Attachment A of this SWPPP.
3. Potential Pollutant Sources – see Sections 2.1 and 2.2 of this SWPPP. There is no rock mining at this site to produce acid rock drainage.
4. Storm water Controls – see Sections 3.1 through 3.6 of this SWPPP.
5. Employee Training – see Section 3.9 of this SWPPP.
6. Certification of Permit Coverage for Commingled Non-Storm water Discharges – There are no non-storm water discharges from this site. See Section 2.3.

Additional Inspection Requirements: Refer to Section 8.J.7.

See Sections 4 and 5 of this SWPPP for inspection and monitoring provisions. This section modifies the quarterly routine inspection frequency to monthly due to the St. Maries River drainage being an impaired receiving water body for sediment

Sector-Specific Benchmarks: Refer to Section 8.J.8.

According to Table 8.J-1, this facility is a Subsector J1, Sand and Gravel Mining (SIC 1442). The Benchmark monitoring requirements are as follows:

1. Nitrate plus Nitrite Nitrogen: 0.68 mg/L
2. Total Suspended Solids (TSS): 100 mg/L

See also SWPPP Section 4.

Effluent Limitations Based on Effluent Limitations Guidelines: Refer to Section 8.J.9.

According to Table 8.J-2, the Effluent Limitations monitoring requirements are as follows:

1. pH: 6.0-9.0
2. Total Suspended Solids (TSS): 45 mg/L daily maximum

See also SWPPP Section 4.

3.9 MSGP State Specific Requirements:

Refer to Part 9.10.3 for the following permit requirements.

9.10.3.1 Monitoring Frequency for Numeric Effluent Limitations

This section states that the monitoring must occur twice per year for numeric effluent limitations due to the invariability of storm water discharges in Idaho

9.10.3.2 Follow-up Monitoring for Benchmark Concentrations

This section states that if four quarters of benchmark monitoring does not exceed the benchmark, then it is no longer necessary to sample for that parameter for the rest of the permit term; however, if any of the four quarterly samples exceeds the benchmark, then sampling must continue.

9.10.3.3 Monitoring of Discharges to Impaired Waters with an applicable WLA in an EPA-approved TMDL

Impaired waters monitoring can be waived if it is proven that the pollutant of concern (TSS) is not expected to be present in the discharge. Otherwise, yearly monitoring for impaired waters must continue.

3.10 Employee Training

Employee training will occur in the following manner:

Person Responsible for Training: Compliance Manager and/or ECG President.

Content:

a) Office Training:

1. New team members will become familiar with the SWPPP and MSGP document; existing team members will review these documents each year.
2. Review the comprehensive site inspection annual report, noting any changes made to the SWPPP or Site Map.
3. Review inspection and monitoring requirements and procedures.
4. Develop or review plans for performing inspections, monitoring and sampling.
5. Review erosion and sediment control concepts.
6. Review Good Housekeeping and Maintenance requirements (3.2 and 3.3).
7. Review spill response procedures (3.4).

b) Field Training at Facility:

1. Review erosion and sediment control concepts.
2. Review Good Housekeeping and Maintenance requirements (3.2 and 3.3).
3. Review spill response procedures (3.4).
4. Inspect all control measures of the SWPPP (3.5 – 3.8).
5. Discuss maintenance evaluation methods and criteria.
6. Discuss control measure performance.

Frequency:

- a) One “In Office” training will occur at a minimum annually by August 22 of each year.
- b) New team members will be trained when they are added to the team.
- c) Storm water pollution prevention techniques will be reviewed by team members to keep current.

3.11 Non-Storm water Discharges

No non-storm water discharges are present at ECG facilities.

3.12 Waste, Garbage and Floatable Debris

To minimize waste, garbage and floatable debris, three covered dumpsters are kept at the ECG main facility. All waste or garbage from any other site is hauled to the main facility. Dumpsters are emptied weekly to prevent overflowing.

3.13 Dust Generation and Vehicle Tracking of Industrial Materials

Dust Generation – During extended periods of dry weather, dust can be generated on haul roads and at mining operations. The following measures are incorporated to minimize Dust Generation:

- During periods of extreme dry weather, roads will be watered to minimize dust.
- Vegetative cover will be established in all areas where mining operations are complete to minimize wind generated dust.

Vehicle Tracking – Gravel is placed on all permanent haul roads.

SECTION 4: SCHEDULES AND PROCEDURES FOR MONITORING

Inactive and Un-staffed Site Exception

There are two different parameters resulting in a site to become inactive.

1. A site has been fully mined and active mining operations have moved elsewhere. All of the industrial activities and materials have been removed from the site and the site is no longer active. All of the BMP's are still in place and the site is said to be in phase one reclamation where the area has been re-graded to contour. This site will typically remain inactive until phase two reclamation can be completed
2. A site that has been reclaimed to the extent of phase two reclamation which includes replacing the topsoil to the original contour and seeding the area. At this stage the site has been reclaimed and will not become active again until the site has been stabilized and the BMP's can be removed.

The inactive and un-staffed sites exception for monitoring is only applicable for benchmark monitoring and does not apply to effluent limitations monitoring or impaired waters monitoring. For a list of current active and inactive sites please refer to the SWPPP section 8E.

Regular Monitoring Periods for all sites:

January 1st – March 30th
 April 1st – June 30th
 July 1st – September 30th
 October 1st – December 31st

Alternate Monitoring Periods for all sites:

March 1st – April 30th
 May 1st – June 30th
 October 1st – November 15th
 November 16th – December 31st

Due to dry weather during the summer months and freezing weather during the winter months, sometimes samples are not possible to collect. To make up for these times, additional samples will be collected during quarters when run-off is present. Additionally, field and reclamation sites that are inaccessible during the winter months due to excess snow fall may be considered substantially identical during the winter months to an accessible site located along the same drainage that has the same site conditions, mining practices, and BMP's.

Substantially Identical Outfall Site Exception

Site 307 is a substantially identical outfall to site 306 and, therefore, will not require quarterly benchmark monitoring. Outfall 307 is approximately 4.5 miles southwest of outfall 306 and both are located along Big Carpenter Creek. Because both were mined and reclaimed with similar techniques around the same time interval, the industrial activities and control measures are very similar. There are no exposed materials located in the area of each outfall. The estimated runoff coefficient of the drainage areas is under 40%.

Tables of Required Monitoring:

Benchmark Monitoring				
Sample Location	Frequency	Pollutant	Benchmark Monitoring Concentration	Procedure for Benchmark Monitoring

Mill (Outfall 1)	4/ year: see MSGP 6.1.6, 6.1.7, 6.2.1.2	Nitrate plus Nitrite Nitrogen	0.68 mg/L	One grab sample from a measurable storm event (see MSGP 6.1). Collected by the Compliance Manager, or appointed personnel. Sample is to be delivered to Test America. Sample collection and handling will be in accordance with instructions from Test America
		Total Suspended Solids (TSS)	100 mg/L	
ECJP (Outfall 2)	4/ year: see MSGP 6.1.6, 6.1.7, 6.2.1.2	Nitrate plus Nitrite Nitrogen	0.68 mg/L	Same as Above
		Total Suspended Solids (TSS)	100 mg/L	
Active Mine Sites (301)	4/ year: see MSGP 6.1.6, 6.1.7, 6.2.1.2	Nitrate plus Nitrite Nitrogen	0.68 mg/L	Same as Above
		Total Suspended Solids (TSS)	100 mg/L	
Active Reclamation Sites (322, 329, 306, 307, CCJP)	4/ year: see MSGP 6.1.6, 6.1.7, 6.2.1.2	Nitrate plus Nitrite Nitrogen	0.68 mg/L	Same as Above
		Total Suspended Solids (TSS)	100 mg/L	

Effluent Limitations Monitoring				
Sample Location	Frequency	Pollutant	Effluent Limit	Procedure for Effluent Limitations Monitoring
Mill (Outfall 1)	2/ year: see MSGP 8.J.9 and 9.10.3.1	Total Suspended Solids (TSS)	45 mg/L daily maximum	One grab sample from a measurable storm event (see MSGP 6.1). Collected by the Compliance Manager, or appointed personnel. Sample is to be delivered to Test America. Sample collection and handling will be in accordance with instructions from Test America
		pH	6.0 - 9.0	
ECJP (Outfall 2)	2/ year: see MSGP 8.J.9 and 9.10.3.1	Total Suspended Solids (TSS)	45 mg/L daily maximum	Same as Above
		pH	6.0 - 9.0	
Mine Sites (301)	2/ year: see MSGP 8.J.9 and 9.10.3.1	Total Suspended Solids (TSS)	45 mg/L daily maximum	Same as Above
		pH	6.0 - 9.0	
Reclamation Sites (322,	2/ year: see MSGP 8.J.9	Total Suspended Solids (TSS)	45 mg/L daily maximum	Same as Above

329, 306, 307, CCJP)	and 9.10.3.1	pH	6.0 - 9.0	
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Impaired Waters Monitoring				
Sample Location	Frequency	Pollutant	TMDL	Procedure for Impaired Waters Monitoring
Mill (Outfall 1)	1/ year: see MSGP 9.10.3.3 and TMDL Report	Total Suspended Solids (TSS)	30 mg/L daily maximum	One grab sample from a measurable storm event (see MSGP 6.1). Collected by the Compliance Manager, or appointed personnel. Sample is to be delivered to Test America. Sample collection and handling will be in accordance with instructions from Test America
ECJP (Outfall 2)	1/ year: see MSGP 9.10.3.3 and TMDL Report	Total Suspended Solids (TSS)	30 mg/L daily maximum	Same as Above
Mine Sites (301)	1/ year: see MSGP 9.10.3.3 and TMDL Report	Total Suspended Solids (TSS)	30 mg/L daily maximum	Same as Above
Reclamation Sites (322, 329, 306, 307, CCJP)	1/ year: see MSGP 9.10.3.3 and TMDL Report	Total Suspended Solids (TSS)	30 mg/L daily maximum	Same as Above

-For specific sampling locations for each site please refer to the site maps in Attachment B.

SECTION 5: INSPECTIONS

Inspectors will review SWPPP Sections 4.1 - 4.3 and referenced sections of the MSGP prior to performing inspections.

During Clearing, Grading, and Excavating Activities:

Inspections to be performed every 14 days or following a ½" rain event.
See SWPPP Section 3.8, subsection 8.J.4.2.

During Mining Activities:

Routine Facility Inspections (MSGP 4.1)

Positions of the person(s), responsible for inspection:

Compliance Manager, Field Manager, ECG President, Office Manager, or Compliance Inspector

Schedule (modified for inactive / unstaffed site):

Monthly at active sites.

Locations to be inspected and issues to watch for:

See the Routine Facility Inspection Form in the Inspection and Monitoring Reports tab of the SWPPP Binder.

Quarterly Visual Assessments (MSGP 4.2)

Positions of the persons responsible for inspection:

Compliance Manager, Compliance Inspector, or appointed technician.

Schedule:

Regular Monitoring Periods for all sites:

January 1st – March 30th

April 1st – June 30th

July 1st – September 30th

October 1st – December 31st

Alternate Monitoring Periods for all sites:

March 1st – April 30th

May 1st – June 30th

October 1st – November 15th

November 16th – December 31st

Inactive and Un-staffed Site Exception

There are two different parameters resulting in a site to become inactive.

3. A site has been fully mined and active mining operations have moved elsewhere. All of the industrial activities and materials have been removed from the site and the site is no longer active. All of the BMP's are still in place and the site is said to be in phase one reclamation where the area has been re-graded to contour. This site will typically remain inactive until phase two reclamation can be completed
4. A site that has been reclaimed to the extent of phase two reclamation which includes replacing the topsoil to the original contour and seeding the area. At this stage the site has been reclaimed and will not become active again until the site has been stabilized and the BMP's can be removed.

For a list of current active and inactive sites please refer to the SWPPP section 8E.

Substantially Identical Outfall Site Exception

Site 307 is a substantially identical outfall to site 306 and, therefore, will not require quarterly visual assessments. Outfall 307 is approximately 4.5 miles southwest of outfall 306 and both are located along Big Carpenter Creek. Because both were mined and reclaimed with similar techniques around the same time interval, the industrial activities and control measures are very similar. There are no exposed materials located in the area of each outfall. The estimated runoff coefficient of the drainage areas is under 40%.

SECTION 6: DOCUMENTATION TO SUPPORT ELIGIBILITY CONSIDERATIONS UNDER OTHER FEDERAL LAWS

6.1 Documentation Regarding Endangered Species.

Emerald Creek Garnet meets the criteria for Criterion B. Below is documentation from the 2005 EIS, section 4.3 Endangered and Threatened Species and Critical Habitat Protection.

“The Endangered Species Act (ESA) (16 USC 1531-1544), amended 1988, establishes a national program for the conservation of threatened and endangered species of fish, wildlife, and plants and the habitat upon which they depend. Section 7(a) of the ESA requires Federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), as appropriate, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their critical habitats. Consultation with the USFWS and NMFS regarding potential effects of the proposed alternatives was initiated by the USACE. Volume I Appendix D contains agency consultation and coordination letters.

Section 7(c) of the ESA and the federal regulations on endangered species coordination (50 CFR 402.12) require that federal agencies prepare biological assessments (Bas) of the potential effects of major actions on listed species and critical habitat. A BA for Federally Listed Plant Species is included in Volume I Appendix E. In addition, a consolidated BA summarizing the finding in Volume II Appendices F, G, and H has been prepared for agency review (Science Applications International Corporation [SAIC] 2003). In response to USFWS comments on the draft EIS (see Chapter 8), the USACE prepared an amended BA for USFWS review. The consolidated BA is presented in Volume II Appendix G and amended BA is presented in Volume I Appendix E. USFS concurrence with the amended BA is found in Volume I Appendix D.”

Section 3.4 of Emerald Creek Garnet’s 1994 EA also addresses Threatened and Endangered Species. Below is documentation from the EA.

“As a condition of section 404 permitting under Authority of the Clean Water Act, ECG contracted the inventory of threatened and endangered plant, animal, and fish species that are listed by both federal and state agencies. Descriptions of findings of these three surveys are found below.”

6.2 Documentation Regarding Historic Properties

ECG meets Criterion B where discharge related activities will not affect any historic properties. Below is documentation from ECG’s 2005 EIS.

“Records of the State Historic Preservation Office (SHPO) indicated that no prior archaeological surveys had been conducted in the project area or within one mile surrounding it, and no archaeological or historical sites had been recorded there. Extensive archaeological surveys and excavations have taken place in the Clearwater River drainage to the south of the project area, in what was traditionally Nez Perce territory (Sappington 1995). An archaeological survey of the project area, in compliance with Section 106 of the National Historic Preservation Act (NHPA), was conducted in 1999 (SAIC 1999). The survey located one historic resource, the remains of a rail line and footbridge (10BW150), and two isolated historical artifacts. All three resources were determined to be ineligible for the National Register of Historic Places (NRHP). The SHPO has concurred with the eligibility determinations. The USACE has completed compliance with Section 106 of the NHPA (refer to Volume II Appendix A and Volume I Appendix F).

No traditional resources have been identified in the project area. The Coeur d’ Alene tribal website noted two cultural sites along the St. Maries River south of the town of St. Maries (Coeur d’ Alene Tribe 2002), but

these are outside the present project area. The USACE initiated government-to-government consultation with the Confederated Salish and Kootenai Tribes of the Flathead Reservation, the Coeur d' Alene Tribal Counsel, the Spokane Tribe of the Spokane Reservation, the Kalispel Indian Community of the Kalispel Reservation, and the Nez Perce Tribal Executive Committee regarding the proposed action. The Coeur d' Alene Tribe expressed an interest in the project and provided comments on the DEIS. The tribal comment letter is included in Volume I Appendix C. The USACE also provided copies of the archaeological survey to the Coeur d' Alene Tribe.”

6.3 Documentation Regarding NEPA Review (if applicable)

Emerald Creek Garnet operates under two different NEPA documents, the 2005 EIS prepared for the St. Maries River sites, and the 1994 EA prepared for sections of Carpenter Creek and Emerald Creek.

SECTION 7: SWPPP CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Jennifer Dickison Title: Senior Geologist

Signature: Jennifer Dickison Date: 03/09/2017

SECTION 8: SWPPP MODIFICATIONS

Instructions (see 2008 MSGP Part 5.2):

- Your SWPPP is a “living” document and is required to be modified and updated, as necessary, in response to corrective actions. See Part 3.4 of the 2008 MSGP.
 - If you need to modify the SWPPP in response to a corrective action required by Part 3.1 of the 2008 MSGP, then the certification statement in section 7 of this SWPPP template must be re-signed in accordance with 2008 MSGP Appendix B, Subsection 11.A or 11.B.
 - For any other SWPPP modification, you should keep a log with a description of the modification, the name of the person making it, and the date and signature of that person. See 2008 MSGP Appendix B, Subsection 11.C.

A. Significant spills, leaks or other releases

Date of incident:

Location of incident:

Description of incident:

Circumstances leading to release:

Actions taken in response to release:

Measures taken to prevent recurrence:

Date of incident:

Location of incident:

Description of incident:

Circumstances leading to release:

Actions taken in response to release:

Measures taken to prevent recurrence:

Date of incident:

Location of incident:

Description of incident:

Circumstances leading to release:

Actions taken in response to release:

Measures taken to prevent recurrence:

Date of incident:

Location of incident:

Description of incident:

Circumstances leading to release:

Actions taken in response to release:

Measures taken to prevent recurrence:

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

Date of incident:
Location of incident:
Description of incident:
Circumstances leading to release:
Actions taken in response to release:
Measures taken to prevent recurrence:

B. Employee training

Training Date: August 17, and 18, 2010	
Training Description: SWPPP Requirements, Spill Prevention and Clean-up	
Trainer: Jennifer Godwin	
Employee(s) trained: All Employees	Employee signature
Refer to log in printed SWPPP for complete list.	

Training Date: February 3, 2011	
Training Description: Spill Prevention and Containment	
Trainer: Jennifer Godwin	
Employee(s) trained: All	Employee signature
Refer to attachment D of SWPPP for complete list.	

Training Date: December, 2012	
Training Description: SWPPP Basics, BMP's, Spill Prevention and Clean-up	
Trainer: Jennifer Godwin	
Employee(s) trained: All	Employee signature
Refer to attachment D of SWPPP for complete list.	
Training Date: December, 2012	
Training Description: SPCC overview, Spill Prevention and Clean-up	

Trainer: Jennifer Godwin	
Employee(s) trained: All	Employee signature
Refer to attachment D of SWPPP for complete list.	

C. Maintenance

Instructions:

- Include in your records documentation of maintenance and repairs of control measures and industrial equipment, including:
 - the control measure/equipment maintained,
 - date(s) of regular maintenance,
 - date(s) of discovery of areas in need of repair/replacement, and for repairs,
 - date(s) that the control measure/equipment was returned to full function, and
 - the justification for any extended maintenance/repair schedules (see Part 2.1.2.3 of the 2008 MSGP).

- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure: 306 Buffer Zone
Regular Maintenance Activities: When Needed
Regular Maintenance Schedule: When Needed

Date Discovered: (03/29/2012)
Reason for Action: Regular Maintenance Discovery of Problem
If Problem,

- **Description of Action Required:** Buffer zone needs more stabilization, bare areas are eroding and contributing sediment to outfall, needs to be vegetated.
- **Date Control Measure Returned to Full Function:** 08/02/2012

- **Justification for Extended Schedule, if applicable:** Wet weather prevented seed from being established, had to wait for drier weather. See Corrective Actions Report 10/08/2012

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure: Mill Outfall
Regular Maintenance Activities: When Needed
Regular Maintenance Schedule: When Needed

Date Discovered: (03/29/2012)

Reason for Action: Regular Maintenance Discovery of Problem
If Problem,

- **Description of Action Required:** Outfall has exceeded Benchmark values for TSS for the year. Need maintenance of storm water control measure.
- **Date Control Measure Returned to Full Function:** 08/15/2012
- **Justification for Extended Schedule, if applicable:** Wet weather inhibited the excavation of a retention basin. Had to wait until the ground dried to excavate the area and seed to establish vegetation.

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure:
Regular Maintenance Activities:
Regular Maintenance Schedule:

Date of Action:
Reason for Action: Regular Maintenance Discovery of Problem
If Problem,

- **Description of Action Required:**
 - **Date Control Measure Returned to Full Function:**
 - **Justification for Extended Schedule, if applicable:**
- Notes:**

Control Measure Maintenance Records (copy information below for each control measure)

Control Measure:
Regular Maintenance Activities:
Regular Maintenance Schedule:

Date of Action:
Reason for Action: Regular Maintenance Discovery of Problem

If Problem,

- **Description of Action Required:**
- **Date Control Measure Returned to Full Function:**
- **Justification for Extended Schedule, if applicable:**

Notes:

D. Benchmark Exceedences

Instructions:

Include in your records documentation of any benchmark exceedences and how they were responded to, including either:

- (1) corrective action taken,
- (2) a finding that the exceedence was due to natural background pollutant levels, or
- (3) a finding that no further pollutant reductions were technologically available and economically practicable and achievable in light of best industry practice consistent with Part 6.2.1.2 of the 2008 MSGP.

Date: 8/30/2011

Parameter Exceeded and Results: TSS

2011 Quarter 1 (5/9/2011)	Result: Mill: 1,580	Site 306: 34	Site 307: 41	ECJP: ND
2011 Quarter 2 (11/17/2011)	Result: Mill: No Outfall	Site 306: ND	Site 307: 12	ECJP: 49
2011 Quarter 3 (12/28/2011)	Result: Mill: No Outfall	Site 306: ND	Site 307: ND	ECJP: 46
	Site 301: 17			
2011 Quarter 4 (2/22/2012)	Result: Mill: 646	Site 306: 104	Site 307: 104	ECJP: 14

Average Result: Mill: 557 Site 306: 35 Site 307: 13 ECJP: 27 Site 301: 17

Benchmark Value: 100mg/L

Document how benchmark exceedence(s) responded to:

Corrective action taken

Parameter(s): The average results have exceeded the benchmark TSS value of 100 mg/L at the Mill site. The graveled roads surrounding the outfall need more gravel added to them to control sediment run-off. Gravel piles will be dumped and spread before the fall rains begin. Part D (corrective actions) of the Annual Report Form for 2011 has been completed for the Mill site.

- Complete Part D (corrective actions) of the Annual Report Form (see section F of the Additional MSGP Documentation).

Date: 3/29/2012

Parameter Exceeded and Results: TSS

2012 Quarter 1 (3/13/2012) Result: Mill: 1,350 Site 306: 455 Site 307: 455 ECJP: 235

Average Result: After the first quarter of 2012, the Mill outfall and the 306 outfall will exceed the 4 quarterly benchmark averages for 2012 with mathematic certainty. Because of this, corrective actions must be taken and control measures must be improved. This exceedence has also been documented in part D of the 2012 Annual Reporting Form and has been filed as a Corrective Action Report.

Benchmark Value: 100mg/L

Document how benchmark exceedence(s) responded to:

Corrective action taken

Parameter(s): Straw and seed will be spread across 306 in areas that are being heavily eroded and silt fences will also be implemented to prevent storm water exceedences. A retention basin will be excavated at the Mill site and then seeded until vegetation becomes established. Site 306 is currently in the process of being reclaimed and the topsoil was recently spread out across the site.

Complete Part D (corrective actions) of the Annual Report Form (see section F of the Additional MSGP Documentation).

Date: 11/19/12 DMP 301 Aspen

Parameter Exceeded and Results: TSS - 158

Average Result: Only sample collected, no average.

Benchmark Value: 100 mg/l

Document how benchmark exceedence(s) responded to:

Corrective action taken: On January 10, 2013, straw bales were spread over site in order to provide a ground cover for when the snow melts in order to keep topsoil in-place until the site is vegetated. Site was reclaimed during the Fall of 2012. The site is currently snow covered.

Complete Part D (corrective actions) of the Annual Report Form (see section F of the Additional MSGP Documentation).

Finding that the exceedence was due to natural background pollutant levels

Parameter(s):

Attach the following documentation:

- An explanation of why you believe that the presence of the pollutant causing the impairment in your discharge is not related to the activities at your facility; and
- Data and/or studies that tie the presence of the pollutant causing the impairment in your discharge to natural background sources in the watershed.

Finding that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice consistent with Part 6.2.1.2.

Parameter(s):

Attach documentation.

E. Active/Inactive status change

Date: December 1, 2010

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: Since field operations have ceased due to winter shut-down, the Emerald Creek Jig Plant is currently inactive and unstaffed.

Date: January, 2011

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: EC Jig Plant re-staffed.

Date: January, 2011

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 307 - Finished mining and completed mid-stage reclamation.

Date: August 2011

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 306- began mining.

Date: December 2011

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 306- Finished mining and completed early stage reclamation.

Date: April 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 306- Began working on finishing the reclamation.

Date: April 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 322- Finished mining and completed early-stage reclamation.

Date: May 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 329- Began mining south of the confluence.

Date: May 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 306- Reclamation complete.

Date: May 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 301- Began mining.

Date: June 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 329- Finished mining.

Date: July 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: CCJP – Began working on reclamation, taking out road, and grading tailings piles.

Date: July 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 329- Began working on reclamation re-grading.

Date: August 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 329- Waiting to re-grade topsoil and complete reclamation until the ponds dry up with the summer weather. Still in early-stage reclamation.

Date: September 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: CCJP – Completed reclamation

Date: October 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 329- ponds have dried and are continuing with reclamation

Date: November 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 329- Reclamation complete for the year.

Date: November 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 301 – Mining complete for the year.

Date: January 2012

New Facility Status: Inactive and Unstaffed Active

Reason for change in status: 326 – Currently mining site.

Date:

New Facility Status: Inactive and Unstaffed Active

Reason for change in status:

Date:

New Facility Status: Inactive and Unstaffed Active

Reason for change in status:

Date:

New Facility Status: Inactive and Unstaffed Active

Reason for change in status:

Date:

New Facility Status: Inactive and Unstaffed Active

Reason for change in status:

F. Deviations from assessment or monitoring schedule

Date: September 31, 2010

Visual assessments **Monitoring**

Describe deviation from schedule: Third quarter visual assessments and monitoring have not been completed.

Reason for deviation: Measurable storm events were either not present or were unable to be sampled from due to the requirement to send samples out the same day. What little rain fell was insufficient to create even mud puddles.

Date: March 31, 2011

Visual assessments **Monitoring**

Describe deviation from schedule: Third quarter and fourth quarter monitoring for 2010 was completed in the first quarter of 2011 due to adverse winter weather conditions

Reason for deviation: Adverse weather conditions.

Date: May 9, 2011

Visual assessments **Monitoring**

Describe deviation from schedule: Since third and fourth quarters for 2010 were off schedule, first quarter 2011 was sampled in second quarter 2011.

Reason for deviation: Adverse weather and offset from 2010 third and fourth quarters

Date: November 17, 2011

Visual assessments **Monitoring**

Describe deviation from schedule: Summer weather made it difficult to sample through the summer months. Because of this dry weather, the second quarter 2011 was sampled in fourth quarter 2011

Reason for deviation: Dry weather and offset from first quarter 2011.

Date: December 12, 2011

Visual assessments **Monitoring**

Describe deviation from schedule: Third quarter of 2011 was sampled in fourth quarter 2011 because of the difficulty to sample during the cold winter months. Also, there was already an offset from second quarter 2011.

Reason for deviation: Very little runoff during cold winter months and offset from second quarter 2011.

Date: February 12, 2012

Visual assessments **Monitoring**

Describe deviation from schedule: Fourth quarter of 2011 was sampled in first quarter of 2012. This was due to adverse winter weather conditions with little runoff, and the already offset third quarter of 2011

Reason for deviation: Cold winter weather and offset from third quarter 2011

Date: October 15, 2012

Visual assessments **Monitoring**

Describe deviation from schedule: Third quarter of 2012 was sampled during the fourth quarter of 2012 in October.

Reason for deviation: Absence of precipitation during the third quarter of 2012.

Date:

Visual assessments **Monitoring**

Describe deviation from schedule:

Reason for deviation:

Date:

Visual assessments **Monitoring**

Describe deviation from schedule:

Reason for deviation:

G. SWPPP Amendment Log

Amend. No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]
1	Updated reclamation and current mine sites and description of progress along with SWPPP maps of these areas.	7/27/2012	Kait Salley- Compliance Inspector
2	Recently changed the Mill outfall and instead of stormwater leaving the site through a ditch at outfall 1, we excavated a retention basin in that area surrounded by a vegetated berm. This will contain the storm water and the outfall will only be active if the basin fills up and a flood event overtops the berm.	9/11/2012	Kait Salley- Compliance Inspector
3	Updated status of current active mine sites and reclamation sites.	10/10/2012	Jennifer Godwin- Compliance Manager Kait Salley- Compliance Inspector
4	Updated status of mined or reclaimed sites.	01/10/2013	Jennifer Godwin Compliance Manager

Amend. No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]
5	Updated benchmark exceedance and corrective action taken.	01/10/2013	Jennifer Godwin Compliance Manager
6			
7			
8			
9			
10			