APPENDIX B – WETLAND IMPACTS AND 404(B)1 ANALYSIS

Table B.1 below summarizes the total delineated wetland area and impact area for the existing alignment and each alignment alternative.

Table B.1
Individual Wetland Data Summary

Wetland Location (RP/MP)	MDT Wetland Assessment Category Rating	Total approximate wetland area within 152.4 m (500.0± ft) of the existing roadway centerline	Approximate Area(s) of Wetland Impact		
			Preferred Alternative	Other Alignment Alternatives	
29.50 LR	II	10.23 ha (25.28 ac)	0.33 ha (0.82 ac)		
30.00 LR	III	3.06 ha (7.56 ac)	0.60 ha (1.48 ac)		
30.40-34.50 LR	I	92.38 ha (228.3 ac)	1.71 ha (4.23 ac)		
35.00 LR	II	3.02 ha (7.46 ac)	0.35 ha (0.86 ac)		
35.70 LR	II	4.20 ha (10.38 ac)	0.09 ha (0.22 ac)		
36.80 LR	III	4.43 ha (10.95 ac)	0.41 ha (1.01 ac)		
37.20 LR	III	2.27 ha (5.61 ac)	0.12 ha (0.30 ac)		
37.90 LR	IV	0.59 ha (1.46 ac)	0.02 ha (0.05 ac)		
38.00 R	III	3.08 ha (7.61 ac)	0.23 ha (0.57 ac)		
38.50 LR	III	1.71 ha (4.23 ac)	0.17 ha (0.42 ac)		
39.20-39.80 LR	I	10.75 ha (26.56 ac)	0.83 ha (2.05 ac)		
40.60 LR	III	2.65 ha (6.55 ac)	0.00		
44.00 L	I	6.96 ha (17.20 ac)	0.00		
Total		**145.33 ha (359.15 ac)**	**4.86 ha (12.01 ac)[1]**		
			Alignment Alt. A	**Alignment Alt. B**	**Alignment Alt. C.**
45.80 R	I	35.40 ha (87.47 ac)	0.00	1.50 ha (3.71 ac)	1.26 ha (3.11 ac)
46.00 L	I	11.73 ha (28.99 ac)	0.00	0.00	0.00
C-2	III	1.92 ha (4.74 ac)[2]	0.00	0.00	0.47 ha (1.16 ac)
C-3	IV	0.13 ha (0.32 ac)[2]	0.00	0.00	0.21 ha (0.52 ac)
47.40 LR	IV	0.52 ha (1.28 ac)	0.16 ha (0.40 ac)	0.17 ha (0.42 ac)	0.00
48.30 LR	III	1.88 ha (4.65 ac)	0.11 ha (0.27 ac)	0.11 ha (0.27 ac)	0.00
49.50LR	III	1.66 ha (4.10 ac)	0.16 ha (0.40 ac)	0.16 ha (0.40 ac)	0.43 ha (1.06 ac)
Total		**53.24 ha (131.55 ac)**	**0.43 ha (1.07 ac)**	**1.94 ha (4.80 ac)**	**2.37 ha (5.85 ac)**
49.80 R	III	0.10 ha (0.25 ac)	0.10 ha (0.25 ac)		
50.00 LR	III	0.80 ha (1.98 ac)	0.00		
50.50 L	III	1.20 ha (2.97 ac)	0.00		
53.50 LR	I	7.40 ha (18.29 ac)	0.13 ha (0.32 ac)		
Total		**9.50 ha (23.49 ac)**	**0.23 ha (0.57 ac)[1]**		
			Alignment Alt. E	**Alignment Alt. D**	
55.70 LR	I	6.57 ha (16.23 ac)	0.64 ha (1.58 ac)	1.73 ha (4.27 ac)	
Total		**6.57 ha (16.23 ac)**	**0.64 ha (1.58 ac)**	**1.73 ha (4.27 ac)**	
57.30 LR	IV	0.30 ha (0.74 ac)	0.02 ha (0.05 ac)		
57.70 LR	III	2.03 ha (5.02 ac)	0.22 ha (0.54 ac)		
58.00 R	III	2.26 ha (5.58 ac)	0.38 ha (0.94 ac)		
59.20 LR	III	1.74 ha (4.30 ac)	0.16 ha (0.40 ac)		
Total		**6.33 ha (15.64 ac)**	**0.78 ha (1.93 ac)[1]**		

Table B.1 (Concluded)
Individual Wetland Data Summary

Wetland Location (RP/MP)	MDT Wetland Assessment Category Rating	Total approximate wetland area within 152.4 m (500.0± ft) of the existing roadway centerline	Approximate Area(s) of Wetland Impact		
			Alignment Alt. H	**Alignment Alt. G**	**Alignment Alt. F**
60.00 LR	III	6.19 ha (15.30 ac)	0.28 ha (0.69 ac)	0.00	0.87 ha (2.15 ac)
F-1	III	0.91 ha (2.25 ac)	0.00	0.00	0.08 ha (0.20 ac)
61.50 LR	III	1.82 ha (4.50 ac)	0.00	0.17 ha (0.42 ac)	0.00
63.20 LR	III	1.18 ha (2.92 ac)	0.06 ha (0.15 ac)	0.06 ha (0.15 ac)	0.00
Total		**10.10 ha (24.97 ac)**	**0.34 ha (0.84 ac)**	**0.23 ha (0.56 ac)**	**0.95 ha (2.35 ac)**
			Alignment Alt. I		
65.30 LR	III	1.30 ha (3.21 ac)	0.22 ha (0.54 ac)		
Total		**1.30 ha (3.21 ac)**	**0.22 ha (0.54 ac)**		
			Alignment Alt. L	**Alignment Alt. J**	**Alignment Alt. K**
J-1	III	0.89 ha (2.20 ac)[2]	0.00	0.53 ha (1.31 ac)	0.00
68.00 L	III	0.29 ha (0.72 ac)	0.29 ha (0.72 ac)	0.22 ha (0.54 ac)	0.00
68.50 LR	III	1.01 ha (2.50 ac)	0.36 ha (0.89 ac)	0.29 ha (0.72 ac)	0.21 ha (0.52 ac)
68.80 R	III	0.31 ha (0.77 ac)	0.00	0.00	0.03 ha (0.07 ac)
Total		**1.87 ha (4.62 ac)**	**0.65 ha (1.61 ac)**	**1.04 ha (2.57 ac)**	**0.24 ha (0.59 ac)**
			Alignment Alt. N	**Alignment Alt. M**	
M-1	III	0.78 ha (1.93 ac)[2]	0.00	0.11 ha (0.27 ac)	
M-2	III	4.54 ha (11.22 ac)[2]	0.00	0.79 ha (1.95 ac)	
M-3	III	2.73 ha (6.75 ac)[2]	0.00	0.06 ha (0.15 ac)	
70.70 LR	III	7.46 ha (18.43 ac)	1.24 ha (3.06 ac)	0.00	
Total		**15.51 ha (38.33 ac)**	**1.24 ha (3.06 ac)**	**0.96 ha (2.37 ac)**	
73.50 LR	III	1.67 ha (4.13 ac)	0.16 ha (0.40 ac)		
Corridor Total		**251.42 ha (621.32 ac)**	**9.55 ha (23.60 ac)**		

Notes:
1 – Reconstruction of these tangent sections involves an alignment generally 15.0 m (50.0± ft) offset from the existing centerline. No alignment alternatives are proposed between these MP/RPs.
2 – These wetlands lie outside the 152.4 m (500.0± ft) delineated area for the existing alignment. An independent delineation was conducted for these alignment alternatives.

The supplementary Wetland Appendices contains a table summarizing the characteristics and attributes, including legal location, functional category, vegetation, soils, delineated area, and total wetland impacts associated with the preferred alternative and for each alignment alternative.

Table B.2 below provides the RP/MP locations, ditch wetland area delineated within 152.4 m (500.0± ft) of the existing centerline, and approximate area of impact within the project corridor.

Table B.2
Ditch Wetland Summary

Ditch Wetland Locations (RP/MP)	Total approximate wetland area within 152.4 m (500.0± ft) of the existing roadway centerline	Approximate area of impact
28.9 L/R	0.26 ha (0.64 ac)	0.01 ha (0.02 ac)
34.8 L/R	0.24 ha (0.59 ac)	0.03 ha (0.07 ac)
44.9 L/R	1.36 ha (3.36 ac)	0.06 ha (0.15 ac)
47.0 L/R	0.60 ha (1.48 ac)	0.08 ha (0.20 ac)
47.1 L/R	0.32 ha (0.79 ac)	0.02 ha (0.05 ac)
48.9 L/R	0.33 ha (0.82 ac)	0.02 ha (0.05 ac)
50.6 L/R	0.28 ha (0.69 ac)	0.05 ha (0.12 ac)
51.4 L/R	0.24 ha (0.59 ac)	0.04 ha (0.10 ac)
54.8-55.4 L/R	0.40 ha (0.99 ac)	0.04 ha (0.10 ac)
56.4 L/R	0.40 ha (0.99 ac)	0.03 ha (0.07 ac)
60.3 L/R	0.36 ha (0.89 ac)	0.05 ha (0.12 ac)
Total	**4.79 ha (11.83 ac)**	**0.43 ha (1.05 ac)**

Wetland Avoidance and Minimization

Compliance with *Section 404* of the Clean Water Act and Executive Order 11990 requires serious consideration of practicable design measures for the avoidance and minimization of wetland impacts from dredge and fill activities. Compensatory mitigation of wetland impacts in the form of restoration, creation, and enhancement is always the last option. The proposed avoidance and minimization measures for this proposed project have been developed in accordance with the *Interagency Operating Procedure for the Conservation of Wetland Resources Associated with Transportation Construction Projects in the State of Montana* (Montana Interagency Wetlands Group (IAWG) 1996).

Avoidance of all identified wetland areas in the project corridor was deemed not practicable based on several factors, including the need to design the proposed project to current state and federal standards. Opportunities to avoid and minimize impacts within the proposed project corridor were investigated in detail during the preliminary road design analysis for the proposed project. Wetland impacts will be avoided and minimized by designing the preferred alignment alternative on or adjacent to the existing roadway centerline, with only necessary adjustments of the horizontal alignment in areas requiring modifications to meet current design standards. Category I wetlands were avoided during the design of Alternative Alignment A (i.e., the Preferred Alignment) by shifting the proposed alignment to avoid impacts to wetlands 45.80 R and 46.00 L. Design measures proposed to minimize wetland impacts to all Category I and II wetland areas in the project corridor include reducing the proposed construction limits from the standard 6:1 slope to 4:1 slopes. At Freezout Lake WMA, wetland impacts will be avoided and minimized by maintaining the existing centerline alignment or slightly shifting the horizontal alignment of the proposed roadway to the east if warranted, as requested by MFWP, to reduce the placement of fill material in wetland areas located on the west side of US 89. Wetland impacts will be further minimized at Freezout Lake WMA by reducing the construction limits from 6:1 to 4:1 slopes on both sides of the proposed roadway throughout Freezout Lake WMA. The reduction of the fill slopes from the standard 6:1 to 4:1 at the seven Category I and II wetland areas in the project corridor resulted in minimizing wetland impacts by 1.74 ha (4.30 ac).

BMPs will be utilized in the wetland areas to ensure that erosion and sedimentation of road fill slopes and other disturbed soils will not affect wetland areas. These disturbed areas will be successfully stabilized and revegetated following construction.

The "No Build" alternative would fail to meet the needs of the traveling public, and as no practicable alternative exist, the impact to the identified wetlands would occur in compliance with Executive Order 11990.

Wetland Mitigation

Mitigation opportunities to compensate for potential wetland impacts along the proposed US 89 project corridor are currently being discussed and developed. The northeast portion of the Freezout Lake WMA, (east of US 89 in Township 23 North, Range 3 West, Section 31), is an option for wetland development and/or enhancement sites. On the north end of Freezout Lake WMA, there is available water sufficient to support a system of level ditches designed to act primarily as waterfowl pairing and nesting habitat. The MFWP Area Wildlife Biologist at Freezout Lake WMA is presently discussing opportunities for wetland mitigation for this proposed project with his peers at MFWP and is very interested in developing additional wetland habitats at Freezout Lake WMA (Kujala, Pers. Comm. 2001). Another option, although less desirable than the Freezout Lake WMA, is constructing wetlands along the periphery of the Savik WPA west of US 89 along the Foster Creek drainage. During conversations with a MFWP Fisheries Biologist, potential mitigation opportunities exist to restore and/or enhance areas of stream habitat along the Teton River west of the project corridor, if this type of compensatory mitigation is deemed satisfactory mitigation for the proposed wetland impacts (Liknes, Pers. Comm. 2002).

404(B)1 ANALYSIS

APPLICANT: Montana Department of Transportation

PROJECT: Fairfield to Dupuyer - Corridor Study

I. Introduction

The 404 (b) (1) Guideline, found in 40 CFR 230, are the substantive environmental criteria in light of which all proposed discharges of dredged or fill material under Section 404 of the Clean Water Act are evaluated. Central to the 404 (b) (1) review is the precept that no discharge of dredged or fill material should be permitted if unacceptable adverse effects will result to the aquatic ecosystem.

Compliance with the Guidelines is determined by reviewing the proposed discharge relative to four restrictions found in Subpart B, Paragraph 230.10. These restrictions state that:

a) No discharge shall be permitted if there is a practicable alternative which would have less adverse impact on the aquatic ecosystem;
b) No discharge shall be permitted if it violates state water quality standards, violates toxic effluent standards or prohibitions under Section 307 of Act, or jeopardizes the continued existence of threatened or endangered species as identified under the Endangered Species Act of 1973.
c) No discharge shall be permitted which will cause or contribute to the significant degradation of waters of the United States.
d) No discharge shall be permitted unless appropriate and practicable steps have been taken to minimize potential adverse impacts to the aquatic ecosystem.

The Guidelines thus set forth the principle that avoidance of adverse impacts to the aquatic ecosystem is the highest priority and, for those adverse impacts which cannot be avoided, minimization is required. Finally, mitigation may be required to offset remaining adverse impacts and bring a proposed project into compliance with the Guidelines.

The factual determinations used to assess compliance with the four restrictions are found in Paragraph 230.11 of Subpart B. Subparts C-F identify specific chemical, physical and biological effects and impacts which must be considered in making the factual determinations. All are embodied in the following review.

II. Project Description

A. Location

U.S. Highway 89 (US 89) is located between Fairfield, in Teton County, and Depuyer, in Pondera County in the north-western portion of the state.

Throughout the Section 404 (b) (1) evaluation, it is assumed that the Preferred Alternative will provide a 10.8 m (36 ft) paved width to include two 3.6 m (12 ft) driving lanes, and 1.8 m (6.0 ft) shoulders (refer to Chapter 2 Alternatives of the Final Environmental Impact Statement). The

data for the wetland impacts and other environmental data in this document reflect the Preferred Alternative.

Refer to the Draft Environmental Impact Statement (FEIS) dated July 2002, and Biological Resources Report (BRR) dated March 2002 for specific information regarding this project, environmental data, and maps and photographs of the project area.

B. General Description

US 89 is a paved, two-lane, minor rural arterial located in north-central Montana. The route travels from Yellowstone National Park on the south, to Glacier National Park and the Canadian border on the north. The corridor is located in Teton and Pondera Counties, and begins approximately 5.8 km (3.6 mi) north of Fairfield, approximately 32 km (20 mi) west-northwest of Great Falls. The study corridor extends north-northwesterly to a location approximately 0.6 km (0.4 mi) south of the Town of Depuyer. The total length of the project is approximately 74.3 km (46.2 mi) in length.

C. Authority and Purpose

The US 89 Corridor has been identified for improvements generally due to its outdated design, including inadequate passing opportunities, narrow shoulders, sharp curves, and poor operations due to the mix of recreational vehicles, trucks, and passenger vehicles. Another factor in it identification for improvements is the corridor's attractiveness as a recreational corridor. The route connects Yellowstone National Park to the south, with Glacier National Park to the north, and serves as a more scenic alternative to I-15. The project is intended to enhance not only the safety and efficiency of this route, but to provide recreation-related enhancements for those travelers. The purpose of the proposed project is four-fold. The overall intent is to:

- Provide a facility with updated design features
- Improve safety of travel through the corridor
- Provide an acceptable Level of Service in the corridor through the year 2023, and
- Provide enhancements for recreational users.

For a more complete discussion of purpose and need refer to the Final Environmental Impact Statement (FEIS), Chapter 1.

D. General Description of Dredged and Fill Materials

1. General Characteristics of the Material

Completion of the proposed work will require the placement of fill materials into both streams and wetlands. Fills will be necessary for highway widening, highway relocation, channel changes, bridge construction, temporary crossings and erosion protection. Different types of fill materials will be used including concrete, riprap, aggregates and earth.

2. Quantities of Fill Materials

The major perennial and intermittent streams within the project area are (from south to north): Teton River, Spring Creek, Foster Creek, Muddy Creek, Jones Creek, Farmers Coulee, Spring Creek, South Fork Dry Fork Marias River, Jensen Coulee, and the Middle, North Fork Dry Fork Marias River, and Matchett Coulee. Several ditches cross through the project area and include, but are not limited to the Cascade Canal, S-T Canal, Teton Ditch, Farmers Ditch, Eldorado Ditch, C Canal, and Bynum Canal. The current design is conceptual and quantities of fill materials at each of the perennial and intermittent streams will be determined upon final design.

3. Source of Fill Materials

All fill material will be obtained from either commercial sources or from the immediate project area and will be free of contaminants. Additionally, contractors will be required to follow the stipulations of Article 107.11 "Environmental Protection" of the *Montana 1995 Standard Specifications for Road and Bridge Construction*. This will further assure that no contaminants are introduced in the Waters of the United States through fill placement and associated contraction.

E. Description of the Proposed Discharge Sites

1. Location of the Sites

The locations of the sites are listed under the Quantities of Fill Materials. In addition the project is locate within the Sun River watershed. The Teton River originates on the east front of the Rock Mountains and meanders east through rolling hills and grasslands to its confluence with the Marias River, a tributary to the Missouri River. The Teton River crosses through the project area south of the Town of Choteau. Tributaries to the Teton River watershed include Spring Creek, Foster Creek, Muddy Creek, Jones Creek, and Farmers Coulee. The Marias River watershed includes Spring Creek, Jensen Coulee, and the South Fork, Middle Fork, and North Fork Dry Fork Marias River.

2. Size of Wetland Sites

This project is going to impact a total of 12.11 ha (29.91 ac) of wetlands. Stream impacts will be largely limited to the right-of-way except where channel changes will occur.

Wetland Impacts for the Preferred Alternative

Location	Total approximate wetland area within 152.4 m (500.0 ft) of the existing roadway centerline	Preferred Alternative Typical Section
Fairfield to Choteau		*10.8 m (36 ft)*
RP 29.50 to RP 45.8	145.22 ha (358.85 ac)	**6.83 ha (16.87 ac)**[1]
Choteau to Dupuyer		*10.8 m (36 ft)*
RP 45.80 to RP 50.0 ***Alignment Alt. A***	53.24 ha (131.55 ac)	**0.30 ha (0.74 ac)**
RP 50.0 to RP 54.8	9.50 ha (23.49 ac)	**0.54 ha (1.33 ac)**[1]
RP 54.8 to RP 55.4 ***Alignment Alt. E***	6.57 ha (16.23 ac)	**0.76 ha (1.88 ac)**
RP 55.4 to RP 60.0	6.33 ha (15.64 ac)	**0.78 ha (1.93 ac)**[1]
RP 60.00 to RP 64.5 ***Alignment Alt. H***	10.10 ha (24.97 ac)	**1.07 ha (2.64 ac)**
RP 64.5 to RP 66.0 ***Alignment Alt. I***	1.30 ha (3.21 ac)	**0.22 ha (0.54 ac)**
RP 66.0 to RP 69.5 ***Alignment Alt. L***	1.87 ha (4.62 ac)	**0.21 ha (0.52 ac)**
RP 69.5 to RP 73.0 ***Alignment Alt. N***	15.51 ha (38.33 ac)	**1.24 ha (3.06 ac)**
RP 73.0 to RP 74.9	1.67 ha (4.13 ac)	**0.16 ha (0.40 ac)**[1]
Corridor Total	**251.31 ha (621.00 ac)**	**12.11 ha (29.91 ac)**

Source: *Biological Resources Report*, BRW, Inc. (2002)
Notes: 1 – Reconstruction of these tangent sections involves an alignment generally 15.0 m (50.0 ft) offset from the existing centerline. No alignment alternatives are proposed between these MP/RPs.

3. Types of Aquatic Resources

The major perennial and intermittent streams within the project corridor are (from south to north): Teton River, Spring Creek, Foster Creek, Muddy Creek, Jones Creek, Farmers Coulee, Spring Creek (Welenstein Coulee), South Fork Dry Fork marias River, Jensen Coulee, and the Middle, and North Fork Dry Fork Marias River. Several ditches cross through the project area and include, but are not limited to the Cascade Canal, S-T Canal, Teton Ditch, Farmers Ditch, Eldorado Ditch, C Canal, and Bynum Canal.

The project corridor is located within the Sun, Teton, and Marias River watersheds. Freezout Lake is located within the Sun River watershed. The Teton River originates on the east front of the Rock Mountains and meanders east through rolling hills and grasslands to its confluence with the Marias River, a tributary to the Missouri River. The Teton River crosses through the project area south of the Town of Choteau. Tributaries to the Teton River watershed include Spring Creek, Foster Creek, Muddy Creek, Jones Creek, and Farmers Coulee. The Marias River watershed includes Spring Creek, Jensen Coulee, and the South Fork, Middle Fork, and North Fork Dry Fork Marias River.

A steel truss bridge is located at the crossing of Teton River. Timber Bridges are located at the crossings of Foster Creek, Muddy Creek, Jones Creek, Jensen Coulee, and Middle Fork and North Fork Dry Fork Marias River. Culverts are located at the crossings of Spring Creek (Welenstein Coulee), and the South Fork Dry Fork Marias River.

4. Timing and Duration of the Discharge

There are three minor bridge replacement projects programmed in the corridor and a detailed design has not been completed. Construction schedules will be determined upon completion of the EIS.

F. Description of the Disposal Method

A number of methods will be used for fill placement. End-dumping will be used in many instances for the primary placement of fill into waters and wetlands. These fills will then be spread over the fill area or, as in the case of riprap, selectively placed with heavy equipment. Where feasible, large earth-moving machines may be used to both place and spread the fill material. During bridge construction concrete fill will be poured directly into sealed forms.

III. Factual Determinations

A. Physical Substrate Determination

1. Substrate Elevation and Slope

Stream fills will have both permanent and temporary impacts on stream bed contours. The most significant permanent changes will occur at those stream crossings where channel relocations will be completed. Permanent changes in elevation and slope will also occur with the placement of concrete fills for bridge construction and riprap placement for erosion protection. Temporary fills at some stream crossings will be necessary for the construction of temporary road crossings to convey traffic during the work period. These fills will be completely removed at project completion. Additional temporary fills may be necessary for cofferdam construction. These fills will also be remodeled at project completion. Both individually and cumulatively, the effects of permanent and temporary fills on substrate elevation and slope will not be great.

Wetland fills associated with the project will result in permanent changes to substrate elevation and slope.

2. Comparison of Fill Material and Substrates at Discharge Sites

Streambeds in the project area consist primarily of silt with some gravel and cobble. Fills placed into these streams will include unclassified earth borrowed from the immediate vicinity, concrete and riprap. Fills placed in wetland areas will be taken from borrow sites in the immediate vicinity and will be similar to the existing substrate. Hydric soils are not acceptable road fill material due to the saturated condition, and their physical and chemical composition.

3. Dredge or Fill Material Movement

Aside from the limited erosion of some of the finer textured fill material during and immediately after construction, the fills will be stable and remain in place.

4. Physical Effects on the Benthos

Invertebrate benthic populations in the immediate fill areas will be destroyed by fill placement. However, construction will create some new benthic habitat and it is anticipated that invertebrate organisms will quickly repopulate these areas. Invertebrate species will be able to repopulate temporary fill areas once fills are removed. Populations in areas adjoining the fill sites may be adversely affected as eroded materials settle to the stream bed downstream of the work sites.

The streams directly affected by the proposed work have very limited vertebrate populations. Any vertebrate in the work areas will likely migrate away from construction disturbances as work begins. The applicant will take steps to limit sediments to the work areas in order to assure that vertebrate populations downstream are not adversely affected.

Individual and cumulative effects on benthic populations will not be substantial.

5. Erosion and Accretion Patterns

Both erosion and accretion patterns will be affected by the proposed work. Erosion Rates will increase during the work period since the disturbed soils and newly placed fills will be more susceptible to erosion than stable, vegetated soils. Consequently, the accretion rates in the affected streams will increase during construction and accretion patterns will be slightly altered.

Some increases in both erosion and accretion rates will occur with the channel changes. However, the new channels will be designed to minimize adverse effects by assuring that channel dimensions are similar to those of the existing channels and by installing riprap and grade control structures where necessary.

Overall impacts will be mostly minor and temporary.

6. Actions Taken to Minimize Impacts

Most of the fill used on the project will come from local borrow sources and will be similar to the existing substrate at the fill locations. To further limit adverse impacts, all work will be completed during low-flow periods and fill areas will be minimized.

Disturbed stream banks and fills will be stabilized with riprap, vegetation or other means. The contractor will be required to follow criteria set forth in the Montana Department of Transportation's *Storm Water Pollution Prevention Plan* (SWPPP). These criteria are designed to limit erosion thereby maintaining stream quality. A complete discussion of the SWPPP is contained in the DEIS, Chapter 4-Environmental Consequences.

B. Water Circulation, Fluctuation and Salinity Determinations

1. Water

a. Salinity – Only minor and temporary impacts on the salinity of the project area's streams are anticipated.

b. Water Chemistry – Minor and temporary fluctuations in water chemistry parameters will occur during the construction. Normal conditions will return with work completion.

c. Clarity – The clarity of the water in the streams crossed by the project will decline during construction as suspended sediment levels increase. However, many of these streams already exhibit increased turbidity. Turbidity levels will return to normal shortly after work completion.

d. Color – Construction will increase erosion rates, thereby putting additional particulates into the streams. This will alter water color to some degree. Effects will be localized and limited to the construction period.

e. Odor – Completion of the work is not expected to alter odor levels.

f. Taste – It is not anticipated that completion of the work will affect the taste of waters in the area.

g. Dissolved Gas Levels – With increased suspended solids and turbidity levels during construction, the photosynthesis rates of aquatic vegetation in project area streams will decrease. This will reduce dissolved oxygen levels returning to normal with work completion.

h. Nutrients – Nutrient levels will increase as nutrients in the disturbed soil and in the fill materials are leached into the streams. Both individual and cumulative effects will be minor with levels returning to normal at work completion.

i. Eutrophication – Streams and wetlands in the project area will not become more eutrophic as a result of work completion.

2. Current and Circulation Patterns

a. Current Patterns, Drainage Patterns, Normal Flows – Channel modifications will potentially occur along the Teton River, Spring Creek, Foster Creek, Muddy Creek, Jones Creek, Farmers Coulee, Spring Creek (Welenstein Coulee), South Fork Dry Fork marias River, Jensen Coulee, and the Middle, and North Fork Dry Fork Marias River. Several ditches cross through the project area and include, but are not limited to the Cascade Canal, S-T Canal, Teton Ditch, Farmers Ditch, Eldorado Ditch, C Canal, and Bynum Canal.

The replacement channel segments will be designed to account for flood flows, water velocity, and backwater and will convey expected high flows.

Current patterns, drainage patterns and flow levels of other project area streams will not be affected.

b. Velocity – New bridges will be designed to convey expected high flows. Grade control structures will be installed in the new channels where necessary.

c. Stratification – The stratification of waters in the project area will not be affected by the proposed work.

d. Hydrologic Regime – With the exception of those sites where channel relocations will occur.

Most of the wetlands in the project area are supported by surface water and groundwater. Although portions of these wetlands will be filled, fill placement will not affect the hydrologic regime of the remaining wetlands.

e. Aquifer Recharge – Completion of the proposed work will have no noticeable effect on aquifer recharge.

3. Normal Water Level Fluctuations

Normal fluctuations in water levels will not be affected by the work.

4. Salinity Gradients

Salinity gradients are characteristic of salt water-fresh water mixing zones. None occur in the project area.

5. Actions Taken to Minimize Impacts

Discharges will be limited to quantities necessary to achieve project objectives. Discharges will consist primarily of soil and aggregates similar to stream substrates. Current patterns and circulation will be maintained through the installation of bridges and culverts adequately sized to maintain flows.

C. Suspended Particulate and Turbidity Determinations

1. Expected Changes in Suspended Particulate and Turbidity Levels in the Vicinity of the Disposal Site

Suspended particulate and turbidity levels will increase during the construction period due to the erosion of fill materials. Equipment working in the streams will also cause increases in suspended particulates and turbidity. Additional increases could result from the erosion of disturbed soils during storms. Levels will return to normal with the end of construction and the stabilization of soils and fills.

2. Effects on Chemical and Physical Properties of the Water Column

a. Light Penetration — Increased suspended particulate and turbidity levels will reduce light penetration in and around the discharge sites. This will not be a substantial impact given the already degraded nature of the streams. With the return of normal suspended particulate and turbidity levels at work completion, light penetration will return to normal.

b. Dissolved Oxygen — With reduced light penetration the photosynthesis rates of the submergent vegetation and phytoplankton will be reduced and dissolved oxygen levels will decrease. Effects will be minor and limited to the construction period.

c. Toxic Metal and Organics — Since most of the fill will come from borrow sources in the project area, it is not expected that the current levels of toxic metals in the streams will be affected.

No organic material will be introduced into streams or wetlands as part of construction.

d. Pathogens — All fill materials will be obtained from commercial sources or from the immediate project area. Fills will be clean and free of pathogens.

e. Aesthetics — The aesthetic nature of the streams crossed by the highway will be reduced to a limited degree during construction. This will be the direct result of suspended particulate and turbidity level increases. Impacts will not extend far downstream of the construction area and will not last beyond the construction period.

3. Effects on the Biota

a. Primary Production or Photosynthesis — The limited plant communities in project area waters will have lower photosynthesis rates as a result of the reduced light penetration association with suspended particulate and turbidity increases. This will be a temporary impact since suspended particulate and turbidity levels will begin to decline at work completion. Impacts will be largely limited to the work area.

b. Suspension/Filter Feeders — Examples of collectors and filter feeders, such as net spinning caddis larvae and burrowing mayfly nymphs, will be affected if populations exist in project area streams. However, any impacts will be temporary and limited to the fill areas and the immediate downstream channel.

c. Sight Feeders — Sight feeders, primarily fish, will have increased difficulty finding food in the turbid water near the work sites. However, populations in these streams are limited and individuals will be able to migrate from the disturbed areas. Individual and cumulative impacts will be minor and temporary.

4. Actions Taken to Minimize Impacts

Suspended particulate and turbidity level increases will be limited in a number of ways. Fill quantities will be limited to amounts necessary to achieve project objectives and these fills will be placed into waters during low-flow periods. The Montana Department of Transportation's *Storm Water Pollution Prevention Plan* will be used to develop an erosion control plan for the project. The plan will include site-specific measures, such as straw bales, seeding and silt fences, to control surface erosion and restrict the entry of particulates onto the streams. Both temporary and permanent measures will be used.

D. Contaminant Determinations

1. Evaluation of the Biological Availability of Possible Contaminants in the Fill Material

a. Physical Characteristics of the Fill Material — Fill materials will include earth, aggregates, concrete and riprap obtained from local or commercial sources. All fill material will be free of contaminants. Contractors will be required to follow the criteria established Article 107.11 "Environmental Protection" of the *Montana 1995 Standard Specifications for Road and Bridge Construction.*

b. Hydrography in Relation to Known or Suspected Sources of Contamination — There are no known or suspected sources of contamination in the project area, including those areas that are potential borrow sites.

c. Results from Previous Testing of the Material or Similar Material in the Vicinity of the Project — Borrow sites have not been identified and, therefore, potential fill has not been tested. No other testing of similar materials in the project area has been completed.

d. Known, Substantive Sources of Persistent Pesticides from Land Runoff or Percolation — Pesticide use is associated with the significant agricultural development in the project corridor. However, no substantive sources of pesticide contamination have been identified.

e. Spill Records for Petroleum Products or Designated Hazardous Substances — The EPA, CERCLA, RCPA, AIRS, RMP, PCS, and TRIS databases were reviewed for locations within the vicinity of the project site that have hazardous materials or water quality issues. A search of the databases noted one site with a toxic release, one hazardous waste handler, one site permitted discharges to water, and one site that had a system risk management plan. No locations of hazardous materials, waste sites or toxic releases were identified in the examination of the DEQ CECRA and AML databases. Information was found from the DEQ Underground Storage Tank (UST) database identifying past and present USTs along the project corridor in Pondera and Teton Counties. Six Sites identified on the UST list had releases or spills at one time.

f. Other Public Records of Significant Introduction of Contaminants from Industries, Municipalities or Other Sources — All available public records have been checked and no additional contaminant sources have been identified.

g. Known Existence of Substantial Deposits of Substances Which Could Be Released in Harmful Quantities by Man-induced Discharges — No deposits of potentially harmful materials are known to exist in the project corridor.

2. Contaminant Determination

An evaluation of the appropriate information above indicates that there is reason to believe the proposed fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and disposal sites and not likely to contaminate. Therefore, the material meets the testing exclusion criteria.

E. Aquatic Ecosystem and Organism Determinations

1. Effects on Plankton

The primary effects on plankton will be directly related to increases in suspended particulate and turbidity levels. These increases will cause decreased plankton populations during the work period. With the completion of work, populations will begin to return to normal. Individual and cumulative effects will be minor.

2. Effects on Benthos

Benthic effects will occur only at those fill sites that contain water; riparian wetlands are normally supported by groundwater and, therefore, do not support benthic communities. Although benthic populations in the fill areas will be lost, most impacts will be minor since fill areas are small and populations are already limited. The most substantial impacts will occur in areas where the existing stream channels will be filled and replaced by newly constructed channels away from the highway. However, new populations should quickly colonize the new channels.

3. Effects on Nekton

As previously noted, streams in the project area are already degraded and nekton populations are limited. Any effects will be minor and temporary since it is anticipated that these species will migrate from the work areas when construction begins and will return or populate the new channels with project completion.

4. Effects on the Aquatic Food Web

Since primary production will be reduced and some low and intermediate level food web species will be lost to fill placement, the ability of the aquatic ecosystem to sustain populations will be reduced during the construction period. With work completion water quality will improve, benthic populations will regenerate and food web function will return to normal. Individual and cumulative impacts will be minor.

5. Effects on Special Aquatic Sites

Project completion will require the filling of 12.11 hectares (29.91 acres) of wetland. The functions and values associated with these wetlands will be lost. Since large quantities of

similar habitat will continue to exist in the project area, impacts will not be significant. In addition, compensatory mitigation wetlands will be constructed to offset adverse effects.

6. Effects on Threatened and Endangered Species

The Bald Eagle (Threatened), Grizzly Bear (Threatened), Mountain Plover (Proposed Threatented), Canada Lynx (Threatened), Gray Wolf (Endangered), and the Montana Arctic Grayling (Candidate) are listed by the USFWS as potentially occurring in the project area. Because there are no known occurrences of Bald Eagle or Mountain Plover breeding in the project area, it has been determined that there will be **no effect** on these species. The Grizzly Bear is known to be active in the vicinity of US 89 from April through June, and again from September through October, between the Teton River south of Choteau north to Dupuyer. Based on confirmed presence and use of the riparian corridors along the major drainages in the project corridor by Grizzly Bear, it is determined based on the analysis in this report, that the proposed action **may effect, is not likely to adversely affect** the Grizzly Bear. Because it is unlikely Canada Lynx would use the project corridor as a travel corridor, it is determined that the project will have **no effect** on this species. The gray wolf is known to occur west of US 89 near the foothills and rangelands along the East Front of the Rocky Mountains. Occasional transient movements between the East Front and US 89 are probable; however, it is determined that the proposed project will have **no effect** on the Gray Wolf. The Montana Arctic Grayling is known to occur in the Sun River Slope Canal and Pishkun Reservoir west of the project area. Based on one confirmed occurrence record of Montana Arctic Grayling in Priest Butte Lakes, it is speculated that some Montana Arctic Grayling from Pishkun Reservoir, Pishkun Canal, and Sun River Slope Canal systems eventually end up in the Greenfield irrigation system that supplies water to Freezout Lake and Priest Butte Lakes. Montana Arctic Grayling are not suspected or known to be present in the other waterbodies in the project area. Based on the limited presence and distribution of Montana Arctic Grayling in the project area, and the fact that this proposed project will not involve any work associated with the above mentioned irrigation systems, it is determined that the proposed project will have **no effect** on the Montana Arctic Grayling.

7. Effects on Other Wildlife

Wildlife species identified as occurring in the project corridor are typical of those species associated with rangeland, agricultural, riparian, and wetlands in the short-grass prairie habitat of northcentral Montana. **No adverse effects** to the wildlife species in the project corridor are expected to result from the implementation of this proposed project.

Fish species known to occur in the project corridor are typical of those species associated with prairie drainage systems in northcentral Montana. The Teton River and Spring Creek are the only drainages in the project corridor where fish population data has been collected. The drainages in the project corridor are subject to irrigation practices, which result in the majority of these systems being dewatered during the summer and fall. Impacts to the fisheries resources and habitats as a result of the widening of the existing alignment are expected to be insignificant as the replacement of structures with similar size and type of structures is anticipated. **No adverse impacts** to the fisheries resources in the project corridor are anticipated to result from the proposed action.

8. Actions Taken to Avoid and Minimize Impacts

a. Fills will be limited to the greatest extent possible in order to minimize the loss of habitat and the displacement of the individual animals occupying that habitat.

b. All fill material will be clean and free of contaminants and will be obtained in the project area or from commercial sources.

c. Every effort will be made to place fill material during low-flow periods.

d. Most of the fill material will be similar to the existing substrate of project area streams.

e. Streamflows will be maintained through the work areas during the construction period.

f. At work completion all temporary fills will be removed and original bottom contours will be reestablished.

g. An erosion control plan will be implemented to control the entry of sediments into streams and their migration downstream of the work areas.

9. Compensatory Actions to Mitigate Impacts

Although efforts to limit adverse impacts will be maximized, some impacts are unavoidable. Such is the case with the wetland losses associated with the proposed work. It is currently the policy of the federal regulatory and resource agencies to require that permittees compensate for unavoidable wetland losses by developing compensatory wetlands to mitigate adverse effects.

Potential impacts to Category I and II wetland areas will be avoided and/or minimized by reducing the construction limits from the standard 6:1 to 4:1 fill slopes. Impacts to wetland areas are proposed to be avoided and/or minimized by designing the preferred alignment alternative on the existing roadway centerline, or immediately adjacent to the existing roadway centerline where feasible. Wetland mitigation opportunities to compensate for project wetland impacts along the US 89 project corridor are currently being discussed and developed. Based on communications with MFWP personnel at Freezout Lake WMA, potential opportunities exist to mitigate the project impacts in this area. The northeast portion of the Freezout Lake WMA, east of US 89 in Township 23 North, Range 3 West, Section 31, is an option for wetland development and/or enhancement sites. Another option, although less desirable than the Freezout Lake WMA, is to construct wetlands along the periphery of the Savik Waterfowl Production Area, along Foster Creek, south of Bynum. Also, during conversations with a MFWP Fisheries Biologist, potential mitigation opportunities exist to restore and/or enhance areas of stream habitat along the Teton River west of the project corridor, if this type of compensatory mitigation is deemed satisfactory mitigation for the proposed project wetland impacts.

F. Proposed Disposal Site Determinations

1. Mixing Zone Determinations

a. Depth of Water at the Disposal Site — The streams of the project corridor are 0.3-0.6 m (1-2 ft) deep at the fill sites.

b. Current Velocity, Direction and Variability — During the normal construction period stream velocities are limited and do not vary significantly. Velocities are somewhat higher in the spring due to snowmelt and precipitation events.

c. Degree of Turbulence — Project area streams are low gradient streams with little turbulence.

d. Water Column Stratification — The streams are normally not stratified to any noticeable degree since they are very shallow and there is usually some current to continually mix the water.

e. Rate of Discharge — It is anticipated that the fills will be placed into the individual streams at various times during the construction period which normally extends from April through November. Each instance of fill placement will require only a brief period of time since it will involve only the placement and distribution of the fill with heavy equipment.

f. Ambient Concentrations of Constituents of Interest — No constituents of interest have been identified.

g. Dredged Material Characteristics — The concrete and riprap fills will be stable to the extent that the concept of a mixing zone does not apply. The fill borrowed from nearby locations will contain varying quantities of fines which will more readily become suspended in the water. The applicant will limit these fill quantities and will take other steps to stabilize the fills and restrict suspended particulates to the work areas.

h. Number of Discharges Per Unit of Time — Discharges will occur at intervals throughout the construction period.

2. Disposal Site and Size

An evaluation of the appropriate factors indicates that the disposal site and/or sizes of the mixing zones are acceptable.

3. Actions to Minimize Adverse Discharge Effects

All appropriate and practicable steps have been taken, through application of the steps identified in 40 CFR Section 230.70 – 230.77 to provide minimal adverse effects of the proposed discharge. These include:

a. Limiting the size of fill areas to the minimum necessary to achieve project goals;
b. Selecting fill material that is similar to existing substrate;
c. Designing fills to maintain stream flows through the work areas during construction and ensuring that culverts and bridges area adequately sized and placed to pass both low and high flows;
d. Ensuring that all fill material is clean and free of contaminants;
e. Stabilizing discharges with riprap, vegetation or taking other protective measures;
f. Timing discharges to coincide with low-flow periods;
g. Implementing an erosion control plan that will confine suspended particulates to the immediate work areas;
h. Minimizing impacts to current and circulation patterns;
i. Developing compensatory mitigation habitat to replace lost wetland functions and values.

4. Determination of Compliance with Applicable Water Quality Standards

The Montana Department of Environmental Quality will review the proposed project to determine compliance with Section 401 of the Clean Water Act. Issuance of Section 401 certification will indicate that applicable water quality standards will not be violated by completion of the work.

5. Potential Effects on Human Use Characteristics

a. Municipal Private and Potential Water Supplies — The sources of water for the towns of Fairfield, Choteau, Bynum, and Dupuyer are at least one-half mile from the proposed construction area and are sufficiently removed so as not to be affected by the work.

A number of private wells are located in the project corridor. Several of these wells will be impacted by the project. The wells impacted will be relocated in consultation with the property owner. Neither surface nor subsurface drainage patterns will be altered. The results of preconstruction water quality testing on these wells and project area streams have been attached to this evaluation as Attachment A.

b. Recreation and Commercial Fisheries — Freezout and Priest Butte Lakes are waterbodies created through a series of dams and canals. These large lakes have been stocked with game fish such as Rainbow Trout, Yellow Perch, Northern Pike, and Black Crappie (Hill, Pers. Comm. 2000). According to the MFWP fisheries biologist, Arctic Grayling from a stocked population in Pishkun Reservoir are known to get into the irrigation systems that supply the Greenfield irrigation system that supplies water to Freezout Lake WMA and eventually Priest Butte Lakes. There is one confirmed occurrence of Arctic Grayling in Priest Butte Lakes during a fisheries survey of the lake. These individuals are considered to be lost from the population as there is no way for them to get back into the Sun River Slope Canal and Pishkun Reservoir system (Hill, Pers. Comm. 2000 and 2002).

According to the MNHP, the Northern Redbelly X Finescale Dace hybrid, a fish species of concern, is documented as occurring in Eureka Reservoir (MNHP 1999). This species could potentially occur in permanently flowing stretches of the Teton River near the project area, but this is only speculative since Northern Redbelly X Finescale Dace have not been captured during fisheries surveys near the project area (Hill, Pers. Comm. 2000 and 2002).

c. Water Related Recreation — There is no water-related recreation on the streams to be directly impacted by the work.

d. Aesthetics of the Aquatic Ecosystem — During construction the aesthetic quality of project corridor streams and associated riparian zones will be adversely altered at the crossing sites. This will result from vegetation removal and soil disturbance. The streams themselves will have a reduced aesthetic quality due to fill placement and increases in suspended solids. Increases in suspended soils will be related to construction work at drainage crossings, but will be temporary in duration. With project completion and revegetation, the aesthetic quality of the aquatic ecosystems will return to normal.

The aesthetic quality of wetland communities in the project corridor will be altered with the loss of wetland acreage to fill placements. The aesthetic nature of the remaining wetlands will not be adversely affected.

e. Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, Refuges, Sanctuaries and Similar Preserves — The Freezout Lake Wildlife Management Area and the Savik Wildlife refuge both exist within the corridor.

G. Determination of Cumulative Effects on the Aquatic Ecosystem

Neither the individual nor the cumulative effects of the proposed stream fills will be significant. Although the loss of wetland acreage is an issue of national concern, the proposed losses are unavoidable and compensatory mitigation will be completed to replace lost functions and values. Cumulative impacts to streams and wetlands resulting from the proposed work will not be significant.

No other discharges of dredged or fill material are know to have occurred in the project area in recent years.

H. Determination of Secondary Effects on the Aquatic Ecosystem

Two potential secondary effects associated with construction have been identified. The first involves increased stream suspended particulate and turbidity rates as a result of the erosion of construction-disturbed soils in the project area. As noted previously, the applicant will implement an erosion control plan to limit impacts to acceptable levels.

An additional secondary effect could occur as a result of the spillage of equipment fuel and lubricants. Should a spill occur these materials could enter a stream and have an adverse effect on aquatic life. The applicant will require contractors to implement a plan to guard against this possibility.

IV. FINDINGS OF COMPLIANCE

A. Adoption of the Section 404 (b) (1) Guidelines to This Evaluation

This evaluation does not deviate from the requirements outlined in 230.10 and all requirements have been met.

B. Evaluation of the Availability of Practicable Alternatives to the Proposed Discharge Sites Which Would Have Less Adverse Impact on the Aquatic Environment

Alternatives considered include:

1. The "no-build" or "no-action" alternative.
2. Complete reconstruction for the length of the project generally along the existing alignment, but offset approximately 15 m (50 ft) east or west of the existing centerline, with a 10.8 m (36 ft) paved roadway.

C. Compliance with Applicable State Water Quality Standards

A short-term Water Quality Standard (318 authorization) will be obtained from the Montana Department of Environmental Quality (DEQ). DEQ will also be requested to issue a Montana Pollutant Discharge Elimination System permit. Certification of the project by DEQ pursuant to Section 401 of the Clean Water Act will be required prior to issuance of a Section 404 permit and will be considered conclusive as to the project's compliance with water quality standards.

D. Compliance with Applicable Toxic Effluent Standards or Prohibitions under Section 307 of the Clean Water Act

Section 307 of the Clean Water Act establishes limitation or prohibitions on the discharge materials containing certain toxic pollutants. The discharges associated with the proposed work will contain none of these toxins and, therefore, the project complies with Section 307.

E. Compliance with the Endangered Species Act of 1973

No threatened or endangered species or their critical habitat will be affected by the proposed work. The project complies with the stipulations of the Endangered Species Act.

F. Compliance with Specific Measures for Marine Sanctuaries Designated by the Marine Protection, Research and Sanctuaries Act of 1972

The act does not apply to the proposed project.

G. Evaluation of the Extent of Degradation of Waters of the United States

1. Significant Adverse Effects on Human Health and Welfare

a. Municipal and Private Water Supplies — The project will not affect municipal water supplies. Any private well impacted by the project will be relocated in consultation with the property owner.

b. Recreational or Commercial Fisheries — Any impacts to recreational fisheries will be minimal. No commercial fisheries exist in the project area.

c. Plankton — Adverse impacts to plankton will be minor and limited to the construction period.

d. Fish — Fish populations in project corridor streams are small. Any impacts to them will be minor and limited to the construction period.

e. Shellfish — No shellfish populations have been identified in project corridor streams.

f. Wildlife — Wildlife populations in the construction area and the vicinity will be affected to differing degrees. Overall adverse impacts to wildlife populations will not be great. Populations will benefit to some degree from work completion in that improved sight distances will better enable motorists to avoid animals on the highway.

g. Special Aquatic Sites — Although wetland impacts will total 0.931 ha (2.301 ac), impacts are considered acceptable in light of the development of mitigation wetlands to offset adverse impacts.

2. Significant Adverse Effects on Life Stages of Aquatic Life and Other Wildlife Dependent on Aquatic Ecosystems

The number of wetland hectares lost to the project will be 0.931 ha (2.301 ac). However, both direct and indirect adverse impacts to aquatic life will not be significant due to precautions taken by the applicant and the development of mitigation wetlands.

3. Significant Adverse Effects on Aquatic Ecosystem Diversity, Productivity and Stability

Ecosystem diversity, productivity and stability will not be adversely affected to any significant degree.

4. Significant Adverse Effects on Recreational, Aesthetic and Economic Values

Significant adverse effects to recreational, aesthetic and economic values will not occur.

H. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem

All practicable steps have been taken to minimize adverse impacts associated with the discharges.

I. Finding

The proposed discharges of fill material are specified as complying with the requirements of the 404 (b) (1) Guidelines, with the inclusion of appropriate and practicable conditions as identified herein to minimize pollution or adverse effects on the aquatic ecosystem. These conditions will be attached to and made part of the Section 404 permit.

Approved by: _____

_____

Date: _____