KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

Unit 16

CUTTING METHOD: Clipper, Packer & Stump
SKIDDING METHOD: Tractor
HAZARD TREATMENT: Underbrush & No Firelines
SILVICULTURAL TRMT: SD - Leave Dead
OPERATION PERIOD: Summer

CUTTING DATE: 10/15/99

D-1 (Rexford) - McGuire LP Salvage

Unit # 160
Acres 24

COMPACTION (Heavy):

COMPACTION (Light):

UNDISTURBED:

DISPLACED:

EXCAVATED SKID TRAIL:

SMZ/ROCK:

COMMENTS:

SHAPE OF UNIT AND PATTERN OF TRANSECT:

- COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
- COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
- UNDISTURBED - No signs of any machinery or skidding activity.
- DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.
<table>
<thead>
<tr>
<th>Transect</th>
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</table>

**DISPLACED**

**EROSION**

**PUDDLED**

**SMZ**

**ROCK**

**BURN PILE**
### Kootenai National Forest

**Soil Disturbance Monitoring Form**

**Unit Date Requested to Be:**

- **K. Kendall**
  - **District:** D-1
  - **Sale/S.A.:** McGuire
  - **Unit #:** 116 Acres 1.5
  - **H.T.:**
  - **Slope:**
  - **Location:**

**Compaction (Heavy):**

- **Tractor:**
- **Forestry @ Stump**
- **Dispersed:**
- **Dedicated:**
- **Underburn & No Firelines:**
- **Summer:**

**Compaction (Light):**

- **Heavy:**
- **Light:**
- **Undisturbed:**

**Comments:**

- The unit was finished this summer and has not gone
- Unburned or been burned yet.

**TO BE COMPLETED:**

- **Tree Trunk:**
- **Skid Lines:**
- **Transact 4:**

**Shape of Unit and Pattern of Transect:**

- **Transact:**
- **25 YD Wide:**
- **Transact:**
- **Narrow 2.5:**

**Compaction (Heavy):**

- Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

**Compaction (Light):**

- Any other area not included in heavy compaction or undisturbed.

**Undisturbed:**

- No signs of any machinery or skidding activity.

**Displaced:**

- Any place soil has been mound by machinery. Also include in heavy or light compaction.
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<td>28</td>
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<td>130</td>
<td>12%</td>
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<td>84%</td>
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- DISPLACED
- EROSION
- PUDDLED
- SMZ
- ROCK
- BURN PILES
SOIL DISTURBANCE MONITORING FORM

DATE: May 9, 1999

CUTTING METHOD: clipper

SKIDDING METHOD: dispersed

HAZARD TREATMENT: not treated yet

SILVICULTURAL TRM: SD-LP

OPERATION PERIOD: Jan-Mar. 1999

Aspect: north

COMPACCIÓN (Heavy)
- Upper

COMPACCIÓN (Light)
- Upper

UNDISTURBED
- Upper

DISPLACED
- Upper

EXCAVATED SKID TRAIL
- Lower

SMZ/ROCK
- Lower

COMMENTS:
Up hill yarding, removing deck down EE. Unit mostly better reforestation. Unit looks very good.

SHAPE OF UNIT AND PATTERN OF TRANSECT

COMPACCIÓN (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACCIÓN (Light) - Any other area not included in heavy COMPACCIÓN or UNDISTURBED.

UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.
<table>
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<tr>
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<th>Transect 3</th>
<th>Transect 4</th>
<th>Transect 5</th>
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KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

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<tr>
<th>DATE OBSERVER</th>
<th>Aug. 9, 1999</th>
<th>CUTTING METHOD</th>
<th>Clipper</th>
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<tr>
<td>DISTRICT</td>
<td>Libby</td>
<td>SKIDDING METHOD</td>
<td>dispersed</td>
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<tr>
<td>SALE/S.A.</td>
<td>Bristow Ck, Selv (LPI)</td>
<td>HAZARD TREATMENT</td>
<td>Scattered</td>
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<tr>
<td>H.T.</td>
<td>SAF/Low - SAF/High</td>
<td>SILVICULTURAL TRMT</td>
<td>SD (Sawd Fbee - Shelterwood)</td>
</tr>
<tr>
<td>Slope</td>
<td>25-40</td>
<td>OPERATION PERIOD</td>
<td>Elevation 4200 - 4900</td>
</tr>
<tr>
<td>Location</td>
<td>Upper middle</td>
<td></td>
<td>7/97</td>
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</tbody>
</table>

- **COMPACATION (Heavy)** - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
- **COMPACTION (Light)** - Any other area not included in heavy COMPACTION or UNDISTURBED.
- **UNDISTURBED** - No signs of any machinery or skidding activity.
- **DISPLACED** - Any place soil has been mounded by machinery, also include in heavy or light compaction.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 11A

- Occasional rock outcrops - lots of angular rock on surface soil -10%
- Surface poor - 4 inch generally common - 7 to 8''
- Go-fish - trail winds through cut - water-based
- Lots of 3'' + CWD left - generally driven on + pushed to ground.
## TRANSECT SUMMARY FORM

<table>
<thead>
<tr>
<th>Transect 1</th>
<th>Transect 2</th>
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<th>Transect 4</th>
<th>Transect 5</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pts.</td>
<td>%</td>
<td>Pts.</td>
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<td><strong>BURN PILES</strong></td>
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</table>
KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE: Aug 9, 1999

CUTTING METHOD: Liquid

SKIDDING METHOD: Stump processed forward to road

If tractor: 

HAZARD TREATMENT: Silvicultural TRMT

SILVICULTURAL TRMT: SD (Seed tree w/ leave island)

OPERATION PERIOD: June - Aug 1999

LOCATION: Libby - Bristow Creek Salvage Unit 11C

Elevation: 4200 - 4600

COMPACTION (Heavy):

COMPACTION (Light):

UNDISTURBED:

DISPLACED:

EXCAVATED SKID TRAIL:

SMZ/ROCK:

COMMENTS: Lots of 3" plus left. Stand mostly LPP - removed all except for several low-lying. 1 Botched large 1999-8, and quantity. Some det. present, generally quite sunny early. Patches of silt and a small amount of surface soil. 4' surface-kept. And possibly debris. Some excavators

Piling for hazard treatment. Unit was composed mostly of

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 11C

COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.

UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ - Include within transect if within harvest unit.
## TRANSECT SUMMARY FORM

<table>
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<tr>
<th>Transect</th>
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</tbody>
</table>
Date: 9/30/99

Observer: Kuennen

Cutting Method: hand, small areas clipped

SKIDDING METHOD: Cable, small areas clipped

If tractor: dispersed, dedicated

District: Libby

Hazard Treatment: To be BB, not done yet

SALE/S.A.: Prospect, Parmentor

Silvicultural Treatment: LT M

Unit #: 46

Operation Period: July 1999

Acre: 11

Aspect: ESE

Slope: 40-60% (SD)

Location: mid-slope

Ele: 4160 - 4400

Compaction (Heavy)

Compaction (Light)

Undisturbed

Displaced

ExcaVated Skid Trail

SMZ/Rock

Comments: Operator pipeline - width of build w/6 ft. http://www.nationalmuseum.net/soil

On scraped slope - lots of angular rock 50-70% grade. deep till deposit

Small segment "bettle" in northern part.

Compaction (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

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Displaced - Any place soil has been mounded by machinery, also include in heavy or light compaction.

Shape of Unit and Pattern of Transect

Compaction (Heavy)

Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

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7/97
### Transect Summary Form

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<th>Transect</th>
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## Soil Disturbance Data Form

**Kootenai National Forest**

**SOIL DISTURBANCE DATA FORM**

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</tr>
<tr>
<td>Sale</td>
<td>Prospect-Parmenter, Crawford</td>
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<td>Unit No.</td>
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<td>Habitat Type</td>
<td>WCR, WCR, Clum, non-WCR, non-Clum, slope: 20-60°, location: mid slope</td>
</tr>
<tr>
<td>Operation Period</td>
<td>July 1999</td>
</tr>
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</table>

### Cutting Method
- **Clipped**

### Skidding Method
- **Skyline**

### Hazard Treatment
- To be BB, not done yet

### Silvicultural Treatment
- LTM

### Compaction
- **Heavy**, Trans. 1
- **Light**, Trans. 1
- **Trans. 2**
- **Trans. 3**

### Undisturbed
- **Trans. 1**
- **Trans. 2**
- **Trans. 3**

### Displaced
- **Trans. 1**
- **Trans. 2**
- **Trans. 3**

### Excavated Skid Trail
- **0**

### Comments
- Could use a few water bars.
- Comments need to be very good quality for one about mid slope beneath the large, white, landing fields. Deep and larger. Cable unit 46 looks better than this chapter section. Thought are not so big or deep.

### Shape of Unit and Pattern of Transect

![Diagram](image)

### Compaction (Heavy)
- any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

### Compaction (Light)
- any other area not included in heavy compaction or undisturbed.

### Undisturbed
- no signs of any machinery or skidding activity.

### Displaced
- any place soil has been mounded by machinery, also include in heavy or light compaction.

### SMZ
- include within transect if within harvest unit.

---

*Signature: Cable*
**TRANSECT SUMMARY FORM**

<table>
<thead>
<tr>
<th>Transect 1</th>
<th>Transect 2</th>
<th>Transect 3</th>
<th>Transect 4</th>
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- **DISPLACED**: 8 4
- **EROSION**: 0 0
- **PUDDLED**: 0 0
- **SMZ**: 0 0
- **ROCK**: 0 0
- **BURN PILES**: 0 0
KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE DATA FORM

DATE 10-5-99

OBERVER Kuenen

DISTRICT Libby

SALE Cripplehorse Salvage
Unit/No. 4A Acres: 13

slope: 10-20%
aspect: ESE

COMPACON(Heavy) 

COMPACON(Light) 

UNDISTURBED

DISPLACED

EXCAVATED SKID TRAIL

SMZ

COMMENTS: Operations look good.

SHAPe OF UNIT AND PATTERN OF TRANSeCT

COMPACON(Heavy) - any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACON(Light) - any other area not included in heavy COMPACON or UNDISTURBED.

UNDISTURBED - no signs of any machinery or skidding activity.

DISPLACED - any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ - include within transect if within harvest unit.

5/93
## TRANSECT SUMMARY FORM

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![Map of Transect Area](image)
10/05/1999
Libby - Cripplehorse Salvage
Unit 5
55903039

DATE 10-5-1999

CUTTING METHOD Clipper pre-bunched w/ excavator

SKIDDING METHOD RTS; some dozer

HAZARD TREATMENT While tree yard - left as is

SILVICULTURAL TREATMENT SD/removed & downs

OPERATION PERIOD Nov. 1998

COMPACTION (Heavy) 51

COMPACTION (Light) 73

UNDISTURBED 140

DISPLACED 1873

EXCAVATED SKID TRAIL

SMZ

COMMENTS Salvage standing & down LPP among SAF uneven w/ WHGES

All regeneration (Sap) advanced throughout unit. 8'-12" cut prepped

Tall stumps present. Area has been salvaged previously, don't see any post
disturbance. Appears operation occurred after wildfires, landform intact

Silt was at depth & down LPP. Appears that some

salvage of LPP had occurred 10 years ago. Did not

see any impacts from that operation.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 5

SMZ - include within transect if within harvest unit.
## TRANSECT SUMMARY FORM

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</table>
SOIL DISTURBANCE DATA FORM

CUTTING METHOD: hand - blowdown area
SKIDDING METHOD: RTS
HAZARD TREATMENT: Geochemical + Burn
SILVICULTURAL TREATMENT: SD

OPERATION PERIOD: Sept. 1998

SHAPE OF UNIT AND PATTERN OF TRANSECT: Unit 9

COMPACTION(Heavy) - any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACTION(Light) - any other area not included in heavy COMPACTION or UNDISTURBED.

UNDISTURBED - no signs of any machinery or skidding activity.

DISPLACED - any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ - include within transect if within harvest unit.

COMMENTS:
Deep ash over very dense till, area is very wet. Overstory - adjacent stands in W1 & W2, mostly SAF reproduction. 3-4" duff, CWD had light, skid near saturation. Good charcoal layer at soil surface. Lots of tree tips. Lots of natural displacement due to windblown. Lots of logging - very wet year round logging. Seepage, the drier interior is associated with clearer, adjacent to the unit.
## Transect Summary Form

### Transect 1
**Pts.** | **%**
--- | ---
Heavy | 30 | 17
Light | 130 | 73
Undisturb | 18 | 10
**TOTALS** | 178 | 100

### Transect 2
**Pts.** | **%**
--- | ---
Heavy | 13 | 10
Light | 81 | 64
Undisturb | 32 | 26
**TOTALS** | 126 | 100

### Transect 3
**Pts.** | **%**
--- | ---
Heavy | 4 | 0
Light | 64 | 14
Undisturb | 50 | 17
**TOTALS** | 211 | 69

### Transect 4
**Pts.** | **%**
--- | ---
Heavy | 5 | 0
Light | 14 | 0
Undisturb | 17 | 0
**TOTALS** | 50 | 17

### Transect 5
**Pts.** | **%**
--- | ---
Heavy | 16 | 0
Light | 5 | 0
Undisturb | 5 | 0
**TOTALS** | 16 | 5

**TOTALS**
**Pts.** | **%**
--- | ---
43 | 14
211 | 69
50 | 17
304 | 100
26 | 9
0 | 0
0 | 0
0 | 0
0 | 0
16 | 5
KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE DATA FORM

DATE 10/5/99

OBSERVER KUNEMI

DISTRICT Libby

SALE Jet A Helicopter Salvage

CUTTING METHOD hand

SKIDDING METHOD Helicopter

HAZARD TREATMENT BB-Fall 99-11001-L7

SILVICULTURAL TREATMENT SD

OPERATION PERIOD Sept. 1997

Elevation: 5250-5150

Aspect: Slightly

Trans. 2

COMPACICTION (Heavy) Trans. 1

Trans. 3

COMPACICTION (Light) Trans. 1

Trans. 2

UNDISTURBED Trans. 1

Trans. 2

DISPLACED 0

EXCAVATED SKID TRAIL NA

SMZ NA

COMMENTS Excavator widens w/ trencher. Sale because of windthrow. BB took very good lot of CWD. Displacement has occurred as a result of windthrow. Salvage of dead & down LPP.

BB occurred about a week before transecting. Very good burn. Needles & twigs removed w/ light chipping by 1/2

SHAPE OF UNIT AND PATTERN OF TRANSCER

Unit 7

COMPACICTION (Heavy) - any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACICTION (Light) - any other area not included in heavy COMPACICTION or UNDISTURBED.

UNDISTURBED - no signs of any machinery or skidding activity.

DISPLACED - any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ - include within transect if within harvest unit.

5/93
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SOIL DISTURBANCE MONITORING FORM

KOOTENAI NATIONAL FOREST

DATE: 10-3-99

DISTRICT: Libby

SALE/S.A.: Upper Fivemile Salvage

Unit #: 20B

Acre: 14

H.T.: SAF/Chan - SAF/1

OPERATION PERIOD: Sept. 1999

SILVICULTURAL TREATMENT: BB Fall 1999, excavated

HAZARD TREATMENT: SD/LPP

SKIDDING METHOD: If tractor: dispersed, dedicated

CUTTING METHOD: Upper

SHAPE OF UNIT AND PATTERN OF TRANSECT

COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.

UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

COMMENTS:

Compaction over till. Lots of WIL seedlings germinated in skid trails -- some burn to transact. BB fire is complete.

Operations look good - low detrimental impact.

Lots of CWD and fines left on unit.

BB completed short while before transacting - some stragglers still smoldering. Needles and turfs consumed, clearing on.

10/05/1999

Libby - Upper Fivemile Salvage

Unit 20B

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KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE: 10/5/99

OBSERVER: Kuenen
DISTRICT: Libby
SALE/S.A.: Upper Fivemile Salvage Unit #29
Acres: 6
H.T.: SAF/Visc - Libby
Slope: 5-15% several rock cliffs

CUTTING METHOD: Chain (tree logging, dedicated)
SKIDDING METHOD: Rubber Tire
HAZARD TREATMENT: BB Fall 1999, Cleavage
SILVICULTURAL TREATMENT: SD/LPP
OPERATION PERIOD: August 1997

LOCATION: ridge top, Aspect: ENE

COMPACTION (Heavy)

- Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACTION (Light)
- Any other area not included in heavy COMPACTION or UNDISTURBED.

UNDISTURBED
- No signs of any machinery or skidding activity.

DISPLACED
- Any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ/ROCK

COMMENTS: 8-12" and over till w/perennial residual; area underlain by rockhead -10 T of CWD, landing approx. 1/4 at end of road.

B prior to transecting, looks very good - removal of needles w/chaining of OB. Sufficient CWD kept.

SHAPE OF UNIT AND PATTERN OF TRANSECT
## Transect Summary Form

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<tr>
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### Disturbance Categories

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KOOTENAI NATIONAL FOREST

DATE OBSERVER July 2, 1999
DISTRIBUTION
SALE/S.A. Fork Fork
Unit # 1
H.T. 11 Acres 36
Slope 8-14%
Location

COMPACTION (Heavy) O
COMPACTION (Light) O
UNDISTURBED O
DISPLACED O
EXCAVATED SKID TRAIL O

COMMENTS

The unit generally looks good. The layout of the unit provided a need for an excavated trail along the edge of unit.

SHAPE OF UNIT AND PATTERN OF TRANSECT

COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
UNDISTURBED - No signs of any machinery or skidding activity.
DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.
SMZ - Include within transect if within harvest unit.
<table>
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SOIL DISTURBANCE MONITORING FORM

KOOTENAI NATIONAL FOREST

07/22/1999
Libby - Berray Mountain
Unit 2    70408003

DATE: 7/22/99
CUTTING METHOD: hand
SKIDDING METHOD: R75
If tractor: dispersed dedicated
HAZARD TREATMENT: not treated yet
SILVICULTURAL TRMT: seed tree
DESTRUCTION PERIOD: July 1999

DISTRICT: Cabinet
SALE/S.A.: Berray Mtn. Unit (Hiet)
Unit #: 8
H.T.: WH/Charlette, DP/Pham/Killer
Acres: 8
Slope: 15-30

Location: slope bottom
COMPACTION (Heavy): lower □ upper □
COMPACTION (Light): lower X X X upper X X X
UNDISTURBED: lower X X X upper X X X
DISPLACED: lower □ upper □
EXCAVATED SKID TRAIL: lower □ upper □
SMZ/ROCK: □

COMMENTS:

There are old skid trails within the unit. These old trails show no signs of erosion and do not need any watering. No portion of unit has 15-20 percent of rocks + stones on the surface. toddler area in southern part of unit needs some digging. All detrimental characteristics observed over 60% is from past logging activities.

SHAPE OF UNIT AND PATTERN OF TRANSECT

COMPACTION (Heavy): Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

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DISPLACED: Any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ: Include within transect if within harvest unit.
## Transect Summary Form

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<thead>
<tr>
<th></th>
<th>Transect 1</th>
<th>Transect 2</th>
<th>Transect 3</th>
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**Diagram:**

- LTM T
- LTM 14617
- LTC PPS
- KO

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This form includes data on disturbances and their impacts across different transects, with totals for each category.
**KOOTENAI NATIONAL FOREST**

**SOIL DISTURBANCE MONITORING FORM**

**CUTTING METHOD**
- **CLIPPER + HAND**

**SKIDDING METHOD**
- **RTS**

**HAZARD TREATMENT**
- **DISTRIBUTED**

**SILVICULTURAL TRMT**
- **TREATMENT YET**

**OPERATION PERIOD**
- **SEP 1999**

---

### SHAPE OF UNIT AND PATTERN OF TRANSECT

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<table>
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<tr>
<th>Location</th>
<th>Unit 2</th>
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<tbody>
<tr>
<td>COMPACTION (Heavy)</td>
<td>upper 10</td>
</tr>
<tr>
<td>COMPACTION (Light)</td>
<td>upper 10</td>
</tr>
<tr>
<td>UNDISTURBED</td>
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<tr>
<td>DISPLACED</td>
<td>lower 18</td>
</tr>
<tr>
<td>EXCAVATED SKID TRAIL</td>
<td>lower 18</td>
</tr>
<tr>
<td>SMZ/ROCK</td>
<td>lower 18</td>
</tr>
</tbody>
</table>

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**COMMENTS**
- Excavated trail put to bed. 6-10" volcanics and over residual.

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**COMPACTION (Heavy)** - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

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**DISPLACED** - Any place soil has been mounded by machinery, also include in heavy or light compaction.
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| DISPLACED| 20   | 11 | 18   | 9  | 13   | 5  | 51   | 8  |
| Excavated | 12   | 7  | 18   | 4  | 0    | 0  | 20   | 3  |
| Puddled  | 0    | 0  | 0    | 0  | 0    | 0  | 0    | 0  |
| SMZ      | 0    | 0  | 0    | 0  | 0    | 0  | 0    | 0  |
| ROCK     | 0    | 0  | 0    | 0  | 0    | 0  | 0    | 0  |
| BURN PILES| 0   | 0  | 0    | 0  | 0    | 0  | 0    | 0  |
KOOTENAII NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE: 9/29/99
OBSERVER: Kuderman
DISTRICT: Cabinet
SALE/S.A.: Smeads Rice
Unit # 67
H.T.: 6F
Slope: 45 - 15 - 90
Aspect: North
CUTTING METHOD: Clipper
SKIDDING METHOD: Dispersed
HAZARD TREATMENT: Not Treated yet
SILVICULTURAL TRMT: IM
OPERATION PERIOD: Sept 1999
Location: mid slope
Elev: 3355 ft
South Rd - smooth

COMPACIOn (Heavy): ☑
[Diagram of compaction areas]

COMPACIOn (Light): ☑

UNDISTURBED: ☑

SMOOTH:

COMMENTS:
Transact 1 parallel road to the north - very gentle slope (45), steepish, WRC/1blc/kite
Transact 2 across slope unit main road and 20 - 30
Transact across upper part of west side, good and 45 - 15 - 90 slope, GRC/1blc/kite
6.1 Rd to the south 25 - 40% slope, a lot more displacement
55 upper part of slope South, 200% slope, also not as steep as north, angular
rock/cheer to surface
Lot of organic debris on gd. Very little 7.5" debris, adequate 3 - 5" CWD

SHAPE OF UNIT AND PATTERN OF TRANSECT:

COMPACIOn (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
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### TRANSECT SUMMARY FORM

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SOIL DISTURBANCE MONITORING FORM

KOOTENAI NATIONAL FOREST

CUTTING METHOD: hand
SKIDDING METHOD: dispersed
HAZARD TREATMENT: BB #1999
SILVICULTURAL TRMT: seed tree SD
OPERATION PERIOD: summer 1999
ELEVATION: 5150-5200

LOCATION:
- Upper slope
- 6-8" and Kawalla quantity

COMPACTION:
- Heavy
- Light
- Undisturbed

COMMENTS:
Lots of surface rock -- upwards of 50% in upper part of unit.
- FieldUse good -- built up suspicious. Water storage problem -- there had been water standing in the area. Not all the water was from a rain event, it could have been more water
- Odor smell coming from the "go-go." Displacement occurs. Water was coming up, wheel tracks -- there could have been more watering. The watering track were very hard to detect. They could be picked up because of heavy wood or fruit damage.
- 13" of CWD very minimal. Unit probably turned too hot since there were no surface organic ( fines) light

SHAPE OF UNIT AND PATTERN OF TRANSECT

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UNDISTURBED - No signs of any machinery or skidding activity.

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In general the unit looks good, < 5% detrimental disturbance.
## Transect Summary Form

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KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

CUTTING METHOD
Skyline

SKIDDING METHOD
If tractor: Skyline - headquarters, tractor alone

HAZARD TREATMENT
B/W fire line fuel break 1996

SILVICULTURAL TRMT
1995 Season

OPERATION PERIOD

COMPACTION (Heavy)

1) Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

2) Any other area not included in heavy COMPACTION or UNDISTURBED.

UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

Walking Through

8/11/99

Rexford - Brier Patch P.C.
Unit 11

12604156

SMZ/ROCK

EXCAVATED SKID TRAIL

COMMENTS

Unit contained mostly LP w/ some fir and Doug fir.

L + DF still as seed trees.  Some of the downed trees was

"mounded" every 20-30 feet.  Other than the machine furrows below RD 7990B there is no soil disturbance.  Furrows were

by excavation of "throwbacks" the area is underlain by

Aridic soil series.  There is a good volcanic ash layer.

Because of the high rainfall rate of the soil water moves laterally

through the soil and is often intercepted by the rock.  This

water moves across the slopes by perched where it is concentrated,

in surface channels, or in springs below the surface.

There is little detrimental disturbance above the RD 7990B

There is some sloughing of the cut slope on RD 7990B.

Part of a distinct 1996 landslide.

SHAPE OF UNIT AND PATTERN OF TRANSECT
TRANSECT SUMMARY FORM

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**Disturbances:**

- HEAVY
- LIGHT
- UNDISTURBED

**Totals:**

**Displaced**

**Erosion**

**Puddled**

**SMZ**

**Rock**

**Burn Piles**

---

[Map with transect points marked]
KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

CUTTING METHOD
Process at Stumps
If tractor: Tractor

SKIDDING METHOD
dispersed
dedicated

HAZARD TREATMENT
BB, w/ Excholine fuel pack 1991

SILVICULTURAL TRMT
SD, 1/11T, 51

OPERATION PERIOD
September 1991

COMPACTION (Heavy)

COMPACTION (Light)

UNDISTURBED

DISPLACED

EXCAVATED SKID TRAIL

SMZ/ROCK

LOCATION

COMMENTS
The unit looks good. There is some detrimental disturbance in the unit. The reviewer was part of a district BMP audit.
All W1 > 14" stumps height left.

SHAPE OF UNIT AND PATTERN OF TRANSECT

COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
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### Disturbances

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### Totals

- Displaced
- Erosion
- Puddled
- SMZ
- Rock
- Burn Piles

---

![Map Image](attachment:map.png)
SOIL DISTURBANCE DATA FORM

DATE: Sept. 13, 1999

CUTTING METHOD: clipper/processor

SKIDDING METHOD: Forwarder

HAZARD TREATMENT: WT, landing clean-up

SILVICULTURAL TREATMENT: SD (deed + down LPP)

OPERATION PERIOD: Summer 1998

UNDISTURBED

DISTRICT: Fortine

HAZARD TREATMENT: WT, landing clean-up

SILVICULTURAL TREATMENT: SD (deed + down LPP)

OPERATION PERIOD: Summer 1998

DISTRICT: Fortine

HAZARD TREATMENT:

SILVICULTURAL TREATMENT:

OPERATION PERIOD:

DISTRICT: Fortine

HAZARD TREATMENT:

SILVICULTURAL TREATMENT:

OPERATION PERIOD:

COMPACTION (Heavy)

- any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACTION (Light)

- any other area not included in heavy compaction or undisturbed.

UNDISTURBED

- no signs of any machinery or skidding activity.

DISPLACED

- any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ

- include within transect if within harvest unit.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 3

Rd. 3553C

5/93
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- **DiHEAVY**
- **LIGHT**
- **UNDISTURB**
- **TOTALS**

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![Map with labels](image-url)
COOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE 9.24.99

CUTTING METHOD clipper

SKIDDING METHOD dispersed

If tractor:

UNDISTURBED

DISTRICT Three Rivers

SALE/S.A. Roaring Meadows Salvage

Unit # 38G Acres 2.1

H.T. W/Clintonia

Slope 5-25% Aspect: SW

Ele: 3700 - 3950

COMPACTION (Heavy)

COMPACTION (Light) 

UNDISTURBED 

DISPLACED

EXCAVATED SKID TRAIL

SMZ/ROCK

COMMENTS Unit looks good.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 38G

-- COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

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09/24/1999
Three Rivers - Roaring Meadows Salvage
Unit 38G
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### Diagram Description
- **LTM LF**: Landmark reference to the left.
- **38C**: Specific location or feature denoted with a number.
- **38B**: Another specific location or feature.
- **38E**: Additional specific location or feature.
- **SD-DWP**: Likely a design or project identifier.
- **LF**: Label or feature indicator.
- **38**: Number or identifier possibly marking a specific area.
- **1415**: Another identifier or reference number.
- **NORTH**: Orientation or direction indicator, possibly north.
**KOOTENAI NATIONAL FOREST**
**SOIL DISTURBANCE MONITORING FORM**

- **Cutting Method:** Chipper
- **Skidding Method:** Forwarders
- **Tractor:** None
- **District:** Three Rivers
- **Sale/S.A:** Roaring Meadows
- **Unit:** 51A
- **H.T.:** W.H. Clanton
- **Slope:** 10-20%
- **Location:** Mid slope
- **Aspect:** Northwest
- **Elevation:** 4200-4300
- **Operation Period:** October - early Dec. 1998
- **HAZARD TREATMENT:** LT M (9/97)
- **Remarks:** Not treated yet (Excavation pile)
- **Forwarder:** Dispersed dedicated

- **COMPACTION (Heavy):** Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

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**SHAPE OF UNIT AND PATTERN OF TRANSECT**

![Diagram of unit and pattern of transect]

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**Comments:**

- There is plenty of CWD and burned timber at this point. There are sawing and logging equipment skid trails. The two roads, the log skid and Rd 393/w, were extended below the point of the roads.
- Less than 10% of the area was disturbed. Some disturbance occurred on the cutblocks by the logging machinery.
- Unit looks good.
## TRANSECT SUMMARY FORM

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- **DISTURBED**
- **LIGHT**
- **UNDISTURBED**

**TOTALS**

- **DISPLACED**
- **EROSION**
- **PUDDLED**
- **SMZ**
- **ROCK**
- **BURN PILES**
KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE
9/24/99

CUTTING METHOD
Krummen, Pagan

SKIDDING METHOD
Three Rivers, Small tractor:

HAZARD TREATMENT
Roaring Meadows, Silvicultural Trmt

SILVICULTURAL TRMT
OPERATION PERIOD
Oct.-Dec. 1999

UNIT # 51B
ACRES 5

H.T. Hemlock, Mixed conifer

LOCATION mid slope

ELEVATION 4100 - 4380

COMPACTION (Heavy)
Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

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SHAPE OF UNIT AND PATTERN OF TRANSECT

Diagram of the shape of the unit and pattern of the transect.
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KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

NOTE

9.24.99

Kootenai National Forest

CUTTING METHOD

clipper

dispersd

fowarded

HAZARD TREATMENT

Forest Health

SILVICULTURAL TRMT

LT M (Seeding w/ Reseved)

OPERATION PERIOD

OCT. - early Dec. 1998

3950 - 4100

CUTTING METHOD

clipper

If tractor:

SILVICULTURAL TRMT

LT M (Seeding w/ Reseved)

3950 - 4100

COMPACTION (Heavy)

COMPACTION (Light)

UNDISTURBED

DISPLACED

EXCAVATED SKID TRAIL

SMZ/ROCK

COMMENTS

Ful of stand of CWD & timber. The unit was virtually logged
go they first percent detrimental disturbance was observed.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 51C

COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.

UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.
## Transect Summary Form

<table>
<thead>
<tr>
<th>Transect</th>
<th>1</th>
<th>Transect</th>
<th>2</th>
<th>Transect</th>
<th>3</th>
<th>Transect</th>
<th>4</th>
<th>Transect</th>
<th>5</th>
<th>TOTALS</th>
</tr>
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<tbody>
<tr>
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<td>Pts.</td>
<td>%</td>
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</tbody>
</table>

**Disturbances:**
- HEAVY
- LIGHT
- UNDISTURB

**TOTALS:**

**Effects:**
- DISPLACED
- EROSION
- PUDDLED
- SMZ
- ROCK
- BURN PILES

![Map Image](image-url)
SOIL DISTURBANCE MONITORING FORM

April 27, 1999

CUTTING METHOD: clipper
SKIDDING METHOD: if tractor
HAZARD TREATMENT: not done yet (Grapple pile)
SILVICULTURAL TRMT: 5/25/99
OPERATION PERIOD: Dec 1998

Location: mid to upper
Aspect: NE
Elevation: 1450 - 1650

MPACTION (Heavy)

MPACTION (Light)

DISTURBED

SPLACED

CAVATED SKID TRAIL

MZ/ROCK

Hazard area: good; winter operations, some old separated
horizontal trails from much older operations.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 15

ACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACTION (Light) - Any other area not included in heavy COMPACATION or UNDISTURBED.

UNDISTURBED - No signs of any machinery or skidding activity.

SPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.
## TRANSECT SUMMARY FORM

<table>
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<th>Transect 1</th>
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<th>Transect 5</th>
<th>TOTALS</th>
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</thead>
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<td>HEAVY</td>
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<td>LIGHT</td>
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<tr>
<td>UNDISTURB</td>
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<td>ROCK</td>
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<td>BURN PILES</td>
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</tbody>
</table>

![Map of transect areas](image)
KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE: April 27, 1999
CUTTING METHOD: Incremental Cutting
SKIDDING METHOD: Forwarder
HAZARD TREATMENT: SD
HAZARD TREATMENT CHART: Dec. 1998

UNIT #: 25
ACRES: 36
SILVICULTURAL TRM: Unit to length
OPERATION PERIOD: LOE

H.T.: 20-35
ASCENT: ENE
ELEVATION: 4400-4600

LOCATION: Mid to upper

COMPACTION (Heavy)

COMPACTION (Light)

UNDISTURBED

DISPLACED

EXCAVATED SKID TRAIL

SMZ/ROCK

COMMENTS: (Include soil, geology, organic debris, other pertinent info)

4-8" ash surface. Unit looks good. Winter operations.

SHAPE OF UNIT AND PATTERN OF TRANSECT

COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.

UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ - Include within transect if within harvest unit.

04/24/1999
Libby - Boundary Mountain Salvage
Unit 25 56006052

560 06 052
<table>
<thead>
<tr>
<th></th>
<th>Transect 1</th>
<th>Transect 2</th>
<th>Transect 3</th>
<th>Transect 4</th>
<th>Transect 5</th>
<th>TOTALS</th>
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</thead>
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<td>HEAVY</td>
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<tr>
<td>TOTALS</td>
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</tbody>
</table>

**DISPLACED**

**EROSION**

**PUDDLED**

**SMZ**

**ROCK**

**BURN PILES**

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**TRANSECT SUMMARY FORM**

- **Transect 1**: HEAVY
- **Transect 2**: LIGHT
- **Transect 3**: UNDISTURB
- **Transect 4**: TOTALS
- **Transect 5**: DISPLACED
- **Transect 6**: EROSION
- **Transect 7**: PUDDLED
- **Transect 8**: SMZ
- **Transect 9**: ROCK
- **Transect 10**: BURN PILES

---

**14-SD LF**

**13-SD LF**

---

**904**
**KOOTENAI NATIONAL FOREST**  
**SOIL DISTURBANCE MONITORING FORM**

<table>
<thead>
<tr>
<th>DATE</th>
<th>Sept. 28, 1999</th>
<th>CUTTING METHOD</th>
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<tbody>
<tr>
<td>CONSERVER</td>
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<td>SKIDDING METHOD</td>
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<tr>
<td>DISTRICT</td>
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<td>HAZARD TREATMENT</td>
<td>WTY</td>
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<td>SALE/S.A.</td>
<td>Libby</td>
<td>SILVICULTURAL TRMT</td>
<td>SD-LPP</td>
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<tr>
<td>Unit #</td>
<td>8</td>
<td>OPERATION PERIOD</td>
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<tr>
<td>Acres</td>
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<tr>
<td>Slope</td>
<td>20-35</td>
<td>Aspect</td>
<td>SSW</td>
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<tr>
<td>Location</td>
<td>mid to upper</td>
<td>Elevation</td>
<td>4300-4700</td>
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<tr>
<td>COMPACTION (Heavy)</td>
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<tr>
<td>COMPACTION (Light)</td>
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<tr>
<td>UNDISTURBED</td>
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<tr>
<td>EXCAVATED SKID TRAIL</td>
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<tr>
<td>SMZ/ROCK</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>COMMENTS</td>
<td>(Include soil, geology, organic debris, other pertinent info)</td>
<td>Rd 4852 D to be put by heli. Unit looks good. One again skid trail. CWD is good. Part of Dist. BMP audit.</td>
<td></td>
</tr>
</tbody>
</table>

**SHAPE OF UNIT AND PATTERN OF TRANSECT**

COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.

UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ - Include within transect if within harvest unit.
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<thead>
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- HEAVY
- LIGHT
- UNDISTURB
- TOTALS
- DISPLACED
- EROSION
- PUDDLED
- SMZ
- ROCK
- BURN PILES

![Map Image]
KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE: Sept. 27, 1999

CUTTING METHOD: Skidline - 90% with tractor - Smith
SKIDDING METHOD: dispersed dedicated
HAZARD TREATMENT: not done yet
SILVICULTURAL TRMT: LTM - st level w/ Reserves
OPERATION PERIOD: Aug - Sept. 1998

LOCATION
- COMPACTION (Heavy)
- COMPACTION (Light)
- UNDISTURBED
- DISPLACED
- EXCAVATED SKID TRAIL
- SMZ/ROCK

COMMENTS (Include soil, geology, organic debris, other pertinent info)

Similar to Unit 3B from the standpoint of vegetation work. Unit was partially thinned & partially skidded.

SHAPE OF UNIT AND PATTERN OF TRANSECT

Unit 3A

- COMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.
- COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.
- UNDISTURBED - No signs of any machinery or skidding activity. DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.
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</table>

Diagram:

- LDS
- 3A
- LTM
- 2710 KO
- 2710 R
- 10A
KOOTENAI NATIONAL FOREST
SOIL DISTURBANCE MONITORING FORM

DATE: Sept 27, 1999
CUTTING METHOD: Pit method
SKIDDING METHOD: Tractor
HAZARD TREATMENT: Not yet
OPERATION PERIOD: Aug - Sept 1998

DISACTIONS

PUBLIC ROAD
MOUND

COMPACTION (Heavy)
COMPACTION (Light)
UNDISTURBED
DISPLACED
EXCAVATED SKID TRAIL
SMZ/ROCK

COMMENTS (Include soil, geology, organic debris, other pertinent info)

A cable unit that was intended for skidder pit in 8x10 spacing for thin planting. Logging crews very good. Lots of CWD left in unit. Due to an operator that was serious, site prepared fairly well. The

SHAPE OF UNIT AND PATTERN OF TRANSCET

IMPACTION (Heavy) - Any place where future vegetative growth will be significantly impacted, i.e., skid trails (both heavily and lightly used depending on amount of compaction related to soil moisture), landings, and other impacted areas.

COMPACTION (Light) - Any other area not included in heavy COMPACTION or UNDISTURBED.

UNDISTURBED - No signs of any machinery or skidding activity.

DISPLACED - Any place soil has been mounded by machinery, also include in heavy or light compaction.

SMZ - Include within transect if within harvest unit.

10/99
<table>
<thead>
<tr>
<th>Disturbance</th>
<th>Transect 1</th>
<th>Transect 2</th>
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 stirring |        |        |        |        |        |        |        |        |        |        |
| LIGHT EROSION |        |        |        |        |        |        |        |        |        |        |
| UNDISTURBED PUDDLED |        |        |        |        |        |        |        |        |        |        |
| SMZ ROCK |        |        |        |        |        |        |        |        |        |        |
| BURN PILES |        |        |        |        |        |        |        |        |        |        |