

U. S. Department of Labor
Occupational Safety and Health Administration

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Investigation Summary

Thu Jun 24, 2004 11:32am

Reporting ID	Investigation Summary Number	OSHA-36 Number	OSHA-36 Establishment Name
0830500	201572674	101573152	Encana Oil & Gas (USA) Inc.
Event Date	05/31/04	Event Time	10:30 pm
Type of Event	Collapse of derrick		

Inspection Number	307522235
Establishment Name	Union Drilling Inc.
Injured/Deceased Name	
Sex	
Age	
Injury	A. Fatality
Name	21 Other
Part of Body	02 Arm(s)-multiple
Source of Injury	35 Petroleum
Event Type	05 Fall (from elevation)
Environmental Factor	13 Working surface or facility layout condition
Human Factor	17 Insufficient or lack of engineering controls
Task	A Regularly Assigned
Substance Code	
Occupational Code	614 - DRILLERS, OIL WELL

Abstract:

The victim was a floor hand on an oil and gas exploration rig. was standing on the monkeyboard moving drill rods at the time the derrick collapsed. The derrick doubled over. The victim was tied to a wire rope lanyard and was using a harness. died as a result of massive trauma as fell with the collapsing rig.

**Inspection Narrative of Encana-Union Drilling Fatality,
Meeker, CO, June 1, 2004**
Case files **307522227** and **307522235**

Introduction

The inspection was based on a fatality reported at a natural gas drill rig in NW Colorado. The rig is in a remote area, about 50 miles west-southwest of Meeker, CO. The Rio Blanco Sheriff's Office reported the fatality. a rig floor hand from was killed when the drill failed by doubling-over at about 10 PM on May 31, 2004.

Jurisdiction

The inspection was jurisdictional as a fatality. The site warranted a full inspection. I conducted opening conferences on both June 1, 2004 and June 8, 2004. The first opening responded to the reported fatality. Encana USA is the owner of the site, and they serve as the controlling contractor. Encana had a "company man" at the site 24 hours per day to oversee all operations. Union Drilling, with a regional office in Vernal, UT and a headquarters in Pennsylvania, was the principal subcontractor and manager of the drill. The drilling operation used other subcontractors—truckers and well service companies—but they had no apparent tie to the accident.

The second opening took place on a return visit during the day when the drill rig owner, Union Drilling, had invited an accident expert, and the manufacturer to study the rig collapse.

The following individuals attended the first opening:

1. Chuck Walter, the "company man" or drilling supervisor for Encana. W has been in the oil and gas business for 38 years. He lives in Grand Junction and his contact phones are 970.241.0381 and 970.640.5122.
- 2.
3. Chris Williams Encana Oil and Gas USA, government liason. Contacts 303.888.6978 and 303.389.5085(o).
4. David Gray, Union Drilling Drilling Superintendent in Vernal, UT. 435.828.8031 and 435.789.2663.
5. William Prakken, outside counsel for Encana, with Williams, Turner, Holmes P.C., PO Box 338, Grand Junction, CO 81502.

On June 2, 2004 I met Mr. Christopher Strong, Union Drilling's CEO.

On June 8, 2004 I also opened with the following individuals:

1. J. Michael Poole, VP Ops for Union Drilling. 412.257.9390(o), 412.443.7512 (c).

2. Jimmy Capps, General Manager, National Oilwell, 405.756.3890(o), 405.650.8278(c).
3. Donald F. Cook, former engineering manager for Union Drilling.
4. Ronny Blankenship, sales manager for National Oilwell.
5. Walter Lee Guice, President, Guice Engineering Sciences, 300 E. Tyler, PO Box 3632, Longview, TX 75606, 903.757.4701.

Walk-Around

The walkaround consisted of a physical inspection and interviews. The physical inspection involved observing collapse-related elements of the rig, and portions of the rig that are independent of the collapse.

Drill-Rig Background

The drill manufacturer was Wilson Manufacturing from Wichita Falls, TX. The rig-mast is telescoping, and designed to lean about 3% to one side. The drill stem hangs/operates off of the overhung side. Wilson built it, probably, in the 1970s. Wilson was a division of the Dana Corporation, and National Oilwell bought Wilson in or about 1998. It was a model #75, serial number 1157-131-330. The serial number plate was on the rig, but the manufacturer plate with engineering specifications was not. Union Drilling numbered the rig 47. Mr. Cook said the load capacity of the drill was 344,000 lbs. Union Oil bought the rig in or about 2000, and sent it to National Oilwell for a re-inspection (not re-certification—Mr. Cook said the proper term is “rectification.”).

Inspection of Daily Drill Logs for the Site

On June 8, 2004 I inspected the drillers daily logs for the accident site. No serious injuries or rig accidents were documented in the logs, and this was consistent with statement by the rig workers.

Rig Inspection—Collapse

The physical investigation of the rig focused on the following elements:

1. Drill set-up-rigging: I observed two non-conforming conditions related to the wind guys and to wire rope rigging throughout the site.
 - A. The wind guy anchors were set at 72' separation from each other or 36' from the centerline. Utah State Oil & gas regulation R614-2-16 requires the operator to observe manufacturer's specifications. Mr. Jimmy Capps of National Oilwell provided the blueprint for guying (attached.) The blueprint allows variance in spacing of the guying—from 40' to 90' from centerline, so the observed spacing was not within manufacturer's specifications.

- B. The wire ropes were uniformly 1" thickness, but in many locations the crew used only two clamps. The riggers handbook calls for 5 clamps—there were two clamps on the tongue line on the floor, one on the crown line and board line; and only one at the breakout of the tongue. Utah State Regulation R614-2-12(F)(3) requires observation of conventional rigging standards.

OSHA can hold Union Drilling to the Utah standard because their regional office is in vernal Utah, and they operate under Utah regulations at their Utah sites.

The guylines at the north end had both failed. The guy lines (wire ropes) had only two clamps. They were tensioned with "come-alongs." None of the guylines had "warning flagging, as required by the API standard. Both come-alongs on the north guylines had broken. The come-along manufacturer is JE Shaffer Co #2, patent #2049110 (no other markings seen). The come-alongs at the north end were both broken, but not the two at the south(east) end of the site.

2. Derrick inspection. The failure zone of the derrick was not accessible because it was about 80' above the derrick floor and the threat of collapse made it inaccessible. By eyesight and through binoculars I observed that the rig fell over to the south-southeast—on the side opposite the draw works. I observed only ductile deformation—no breaks. The derrick did not appear to collapse at any connection (called dogs) in the telescoping system.

Mr. Guice (G) conveyed the following observations that he made from a bucket on June 8, 2004. G did not observe failure at the dogs and did not directly observe anything that lead him to conclude the cause of the failure. He did not observe any replacement plates. His preferred theory was that a repair plate was installed. The plate metal should have been 70,000 psi test, but could have mistakenly been "A36" which is 36,000 psi. Alternatively, the weld in the repair could have been bad. He named three types of weld splices: a. belt splice, b. angle splice, and c fish plate. G said if it was a belt splice, that would have been marginal.

3. OSHA derrick inspection—I observed that the victim had been tied-in to the monkey board by means of a wire rope instead of the prescribed "break-away" lanyard designed for fall protection.

G said that the block had not been pulled into the crown—there was no evidence of damage/deformation or paint scraped off of the crown.

G said that the draw works could not have pulled excessively because the draw works clutch would fail before the draw works pulled to failure. G did not authenticate this theory at the time of the site visit.

Union Drilling and Mr. C said that they will send the broken rig to an independent engineering firm, G&M Well Servicing in Kilgore TX.

4. Drill floor—The three National Oilwell (NO) professionals, Messrs. Blankenship, Capps and Cook stated they had more than 100 years of combined experience in drill rig construction/operations. They made the following observations of the failure scene in the area of the draw works:
 - a. The rig has a set of load lines that run from a large block, called a "headache" which is about 15' behind the draw works. The load lines are attached to the headache with an anchor bracket—the anchor bracket is attached to the load line in a chain of saddles and pins—the load line runs to about mid-way up the derrick (it is possible they ran, as separate lines, to the crown as well). Whereas the three NO professionals maintain that the load line provides structural integrity to the derrick, Mr. G says that it does not—he stated the welds at the headache would only hold about 2,000 lbs.
 - b. The anchor bracket broke at the weld on the northwest side of the rig. The exposed weld revealed a "foamy" texture and welding. The bracket at three weld spots—at the top, a line weld at the middle, and a second member welded about 2.5' to the bottom. On the Sw side, the attachment failed at all three welds. On the NE side of the headache, the bracket failed by brittle deformation at all three bracket connection points—clean breaks.
 - c. One of the load lines had torn free of the bracket. A pin in saddle had failed under brittle deformation. The pin was 1" in diameter. The three NO professionals pointed out that the saddle had a 1.5" aperture and should have taken 1.5" pin opening. One of the saddles that attached the wire rope to the bracket was highly deformed—contracted about 1" to 2" in its short axis from its manufactured thickness.
 - d. The load line still appeared to be attached to the rig, but I did not inspect the attachment due to hazards on the rig floor.
5. Mud Pit—Drilling Floor and Guardrails
 - a. The guardrail at the SW corner of the drilling floor was missing, leading to 12' fall.
 - b. Guardrails were missing at the de-silter room, causing exposure to a 10' fall.
 - c. Guardrails were missing on the walking surface on top on the mudpit

Rig Inspection—Collapse—Operations

National Oilwell's Year-2000 Rectification of Drill Rig:

Union Oil provided the enclosed "rectification" (an invoice, not an inspection report) of the rig. This took place after Union bought the rig and before they placed it in service. The report shows that the inspection included magnaflux inspection welds, but it did not name which weld were inspection.

Interview of On-Duty Driller: was the driller on duty at the time of collapse. In response to questions, made the following statements.

Interview of Driller on Second Tour of Rig: was the driller for the opposite tour.

Interview of Tool Push: was the tool push for Union Drilling, and the senior Union man on-site. In response to questions, provided the following information.

Interview of Deck Hand: In response to question, made the following statements:

Interview of Floor Hand: In response to questions, provided the following information:

Review of Pason Data System Logs—Recorded Hole History— On June 8 I reviewed the electronic Pason drill log to determine if the rig drill stem had been loaded in excess of its 330,000 lbs capacity.

The review found one overload events on May 31, 2004—hook loads of 380,000 at 21:15—the time of the collapse. In talking to site drillers, the Eucana engineer, and other, most view the excess load at the end as a reflective of the failure event, and not as the cause of the failure—as the derrick fell, it pulled an excessive load. OSHA Engineer Cooper maintained that the recorded load of 375, 000 lbs. may have been the actual load.

Review of Wyoming and Utah State Oil and Gas Safety Regulations

Eucana operates in Wyoming, but since none of their employees worked on the rig, OSHA cannot issue 5a1 citations against the company. Union Drilling does not operate in Wyoming, but they do operate in Utah (their regional office is in vernal, Utah). The Utah standards are found on the Internet at: <http://www.rules.utah.gov/publicat/code/r614/r614-002.htm#E16>. The relevant regulations are attached in the case file.

Description of Drill Setup and Engineering—Union Drilling supplied four pages of photos and engineering schematic for the telescoping rig (enclosed in the Union Drilling case file). Page for the enclosure depicts two sets of load lines—on from the “headache” to the mast, and the second set from the “headache” to mid-way of the derrick.

July 12, 2004 meet with OSHA Engineer Wade Cooper

I met with Mr. Cooper to discuss the case file. He suggested that the clutch on the draw works should have failed safe to assure that the weight on hook did not exceed capacity. Mr. Cooper said that the last reading on the Pason log reflects the true load-on-hook and may not be an artifact of the collapse.

July 16, 2004 Call to National Oilwell General Manager of Field Operations, Jimmy Capps

Mr. Capps stated that there is not capacity setting on the draw works clutch—the clutch is set by pressure—to 125 psi and has a 40,000 lbs single line derrick pull capacity. If the number of draw lines to the derrick increase, this pull capacity proportionally increases. Similarly, if the air pressure to the clutch is increased, so will the capacity.

July 27, 2004 meeting with Dr. Alfred Eustes and Dr. William Fleckenstein, professors of petroleum engineer at Colorado School of Mines. Both are recognized expert in drilling operations. In response to questions and review of the case file, They concurred that the weld on the load line arm at the headache was faulty; that the load line contributes to the structural stability of the derrick; and that its failure could cause the failure of the derrick. In learning of the accident, Dr. Fleckenstein, who has worked as a drilling superintendent, expressed particular concern that the drilling operator had a
in the derrick at a time when they were pulling loads on the hook near the rated capacity of the rig.

July 28, 2004 Interview of O.M. Stallcup of JE Shaffer, manufacturer of Come-along hand power winches. Mr. Stallcup (S) is the co-owner of JE Shaffer. He stated that the come-along at the Union site, model #2, is the company's standard model, with a rated capacity of 2,750 lbs. The model #2 has been a standard in-use in the drilling industry for 50 years. He stated that he did not know why a company would use a come-along with a capacity of about 1 ton on a wind guy anchor with a capacity of 10 to 20 tons. He stated that there is an accepted, but not-uniform practice where the employer uses higher -test chain to "chain-around" the come-along connection, thereby obviated the lower working load limit.

July 28, 2004, Interview of J.D. Danni, Director Wyoming Worker's Safety and Worker's Compensation— In response to questions, he made the following statements: The Wyoming Standard has a specific rule for attaching of the wind guys to the guy anchors—SubChapter 7, (ix). This prescribes that the all of the components of the wind guy connection must have the same strength as that of the wind guy.

He stated that if the wind guy had been set to meet that standards, it may have diminished the failure of the derrick, or slowed its progress.

Rig Failure Scenario—Proposed Root Causes and Probably Cause:

1. Prior to the September 25, 2000 rectification of the rig, an unknown party re-welded one side of the load line arms to the "headache" at the back of the derrick. This arm is here called the "right" arm—right because when facing the back of the rig, and looking to the derrick from the draw works, the arm is on the right. The welds were faulty as demonstrated by rust in them and the foamy-porous texture seen in case file photo graphs as DVD #2 of the case file.

2. National Oilwell either did not magnaflux this weld, or the magnaflux test did not detect the faulty weld.
3. It is possible that after the 2000 rectification, the arm had failed and was re-welded. One driller, The investigation did
not definitively constrain the date of the welds on the headache.
4. The same driller The
case CSHO did not review the drill logs from the prior 17 holes, but did review the entire log for this hole. The rated capacity of the rig was 340,000 lbs. The failure event was coincident with a loading of 375,000 at 21:15-hour.
5. The overloaded is presumed to have cause the right arm attached to the load line(s) to fail at the headache. The load lines attached to the derrick had not failed.
6. The derrick pulled away from the load lines, causes the left arm to fail, and the left load line to similarly fail.
7. The collapsing derrick pulled the load line and attachments into the area of the hydraulic controls, aft of the derrick. As the load line and attachment became caught-up in the works aft of the derrick, the saddle attaching the headache arm to the load line was shock loaded. It deformed and, on one side, a pin in the saddle failed.
8. The rig doubling over also pulled out of the wind guys. The two come-alongs attached to the guys at the north, aft end, both had brittlely failed. At the south end they had not broken.

The failure of the weld at the right attachment of the loadline to the headache is the probable cause of the rig collapse. The four other alternative hypotheses are ruled out—

- A. The dogs that secure the telescoping derrick were secure.
- B. The block had not pulled into the crown—there was no evidence of crown damage.
- C. The consensus of those engineers at the site, and the input of JD Danni from Wyoming OSHA, is that the wind guys are not designed to carry substantial structural weight to prevent collapse. Instead they are designed to reduce swaying. The come-alongs that attached the wind guys are presumed to have failed after the failure of the load line arm brackets. It is possible that this was a contributory cause to the derrick failure.
- D. Union drilling reported that metallurgical testing did not detect sub-standard plate metal used in a derrick repair at the failure zone.

WILLFUL/CRIMINAL ANALYSIS:

The violative conditions do not meet the requirements for a willful citation, and therefore could not be criminally prosecuted. The primary weakness for a willful citation is that the cited vertical OSHA standard—PPE and guardrails—do not arise to the level of willful violations:

1. These are not directly related the fatality.
2. The employer had not been previously cited under the same standard. Had this been done, it would have gone toward proving knowledge of the standards.
3. There is no evidence the foreman knew the rig would collapse and ordered the victim into harm's way.
4. The employer does not have a history of egregious violations.

CPL 02-00-113 - CPL 2.113 - Fatality Inspection Procedures —

The Initial elements of the CP—A thru H are perfunctory. The following is the disposition of the remaining elements.

- I. Personal information and Accident Details—In case file on OSEA forms
- J. Criminal analysis—As above
- K. Rescue Operations—NA
- L. Public Information—NA
- M. Family Contact—Letter written—no calls.
- N. Pre-Citation Review—Area Director is reviewing/overseeing
- O. Post-citation Procedures—Citation not yet issued
- P. Audit—Citations not yet issued. Audit pending completion of issuance/settlement.

Closing

On the day of inspection I closed with C. I advised the company of its rights and responsibilities, and I told them about the citation process. I will advise Union's safety Manager of the final citations upon approval of the citations by DAO Area Director.

U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND
HEALTH ADMINISTRATION

In the Matter of: Union Drilling Inc.
OSHA No. (s): 307522235

INFORMAL SETTLEMENT AGREEMENT

The undersigned Employer and the undersigned Occupational Safety and Health Administration (OSHA), in settlement of the above citation(s) and penalties, which were issued on 09/29/04, hereby agree as follows:

1. The Employer agrees to correct the violations as cited in the above citations or as amended below.
2. The Employer agrees to pay the proposed penalties, if any, as issued with the above citation(s), or, if amended by this agreement, as amended below.
3. The Employer further agrees to pay any penalties due by 10/29/04. If not paid by this date, the full penalty as originally assessed shall become due and payable.
4. The Employer and OSHA agree that the following citations and penalties, if any, are not being amended:

Not Applicable.

5. OSHA agrees that the following citations and penalties are being amended as shown on the attached citation:

Cit 01 Item 001: Penalty reduced to \$3,375.00, abatement date 12/15/04;

Cit 01 Item 002: Penalty reduced to \$3,375.00, abatement date 12/15/04;

Cit 01 Item 003: Penalty reduced to \$4,725.00, abatement date 12/15/04;


Cit 01 Item 004a: Penalty reduced to \$3,375.00, abatement date 12/15/04;

Cit 01 Item 004b: Abatement date 12/15/04

Cit 01 Item 005: Penalty reduced to \$3,375.00

6. The Employer agrees to continue to comply with the applicable provisions of the Occupational Safety and Health Act of 1970, and the applicable safety and health standards promulgated pursuant to the Act.
7. The Employer agrees to maintain a safety and health program, which includes audits to assure compliance with OSHA regulations, and safety and health training to reduce hazards in the workplace.

8. The Employer, by signing this informal settlement agreement, hereby waives its rights to contest the above citation(s) and penalties, as amended in paragraphs 4 and 5 of this agreement.
9. The Employer agrees to immediately post a copy of this Informal Settlement Agreement in a prominent place at or near the location of the violation(s) referred to in paragraphs 4 and 5 above. This Informal Settlement Agreement must remain posted until the violations cited have been corrected, or for 3 working days (excluding weekends and Federal Holidays), whichever is longer.
10. By entering into this agreement, the employer does not admit that it has violated the cited standards for any litigation or purpose other than a subsequent proceeding under the Occupational Safety and Health Act. It is understood and agreed upon by both parties (Union Drilling, Inc. and OSHA) that this Settlement Agreement constitutes a compromise of a disputed claim. This Agreement is being entered into solely to avoid further litigation and expense to the parties. Union Drilling, Inc. specifically denies any and all allegations that it violated the Act. Union Drilling, Inc. in acceptance of this Settlement is not intended to be, and shall not be so construed as, an admission by Union Drilling, Inc. or any of its officers, directors, employees or agents that any person acted in violation of the Occupational Safety and Health Act. Except for further proceedings arising under the Occupational Safety and Health Act, nothing in this Agreement, including the Agreement itself, its execution, as well as any Final Order, is in admission or evidence, nor is it to be construed as an admission or treated as evidence, of any fact or of any violation of the Act by Union Drilling, Inc. or its directors, officers, employees or agents, nor shall it be used or admitted in evidence in any litigation or other proceeding, either legal, equitable, or administrative. Nothing in this Agreement should be construed to suggest any negligence or wrongdoing by Union Drilling, Inc. under common law.
11. Each party to this proceeding agrees to bear its own costs, fees, and expenses incurred at each and every stage of this proceeding.
12. By entering into this agreement, the employer agrees to improve the effectiveness of its overall Safety and Health Program. The employer agrees to implement a process of having supervisory personnel complete a job hazard assessment tool/on-site auditing checklist when engaged in drill rig activities. The job hazard assessment tool/on-site auditing checklist will include components that include the anticipation and recognition of hazards prior to the start of work and the means to eliminate such hazards, including but not limited to: scope of work (a planning tool to enable the anticipation of hazards associated with the scope of work), nature of hazards and protection systems to be utilized, training the crew members, and as needed inspections to ensure proper correction of hazards. Supervisory personnel will complete, certify, and date the form prior to the start of work for the day. Supervisory personnel will actively and periodically provide input into the contents of the form to foster employee involvement in the Safety and Health program. Documentation of the implementation of the job hazard assessment tool/on-site auditing checklist will be provided to the OSHA Denver Area Office no later than November 15, 2004.


10/27/04
For Occupational Safety and
Health Administration
HERB GIBSON, Area Director
(Signature and date)


10/28/04
For Union Drilling, Inc.
(Signature and date)

NOTICE TO EMPLOYEES

The law gives you and your representative the opportunity to object to any abatement date set for a violation if you believe the date to be unreasonable. Any contest to the abatement dates of the citations amended in paragraph 4 of this Settlement Agreement must be mailed to the U.S. Department of Labor Area Office at Denver Area Office, 1391 Speer Blvd., Suite 210, Denver, CO 80204, within 15 working days (excluding weekends and Federal Holidays) of the receipt by the Employer of this Settlement Agreement. You or your representative also have the right to object to any of the abatement dates set for violations, which were not amended, provided that the objection is mailed to the office shown above within the 15 working-day period established by the original citation.

U.S. Department of Labor
Occupational Safety and Health Administration

Inspection Number: 307522235
Inspection Dates: 06/01/2004-09/28/2004
Issuance Date: 09/29/2004



Citation and Notification of Penalty

Company Name: Union Drilling Inc.
Inspection Site: Figure Four #8016B, Rifle, CO 81650

Citation Item 1 Type of Violation: **Serious**

Section 5(a)(1) of the Occupational Safety and Health Act of 1970: The employer did not furnish to each of his employees employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees in that employees were exposed to an amputation and/or crushing hazard:

(a) Union Drilling Inc., at ~~Figure Four Ranch # 8016B~~ drill site, Rifle, CO: On or before June 1, 2004, the employer did not ensure that five clips were secured to the wire rope loop attached to the breakout tongs, thereby exposing five or more employees to an amputation hazard in the event of clamp failure. DELETE INSTANCES (A) & (C)

(b) Union Drilling Inc., at Figure Four Ranch # 8016B drill site, Rifle, CO: On or before June 1, 2004, the employer did not ensure that five clips were secured to the wire rope loop attached to the four wind guys, thereby exposing five or more employees to an amputation hazard in the event of clamp failure.

(c) Union Drilling Inc., at ~~Figure Four Ranch # 8016B~~ drill site, Rifle, CO: On or before June 1, 2004, the employer did not ensure that five clips were secured to the wire rope loop attached to the wire rope rigging on the drill floor, thereby exposing five or more employees to an amputation hazard in the event of clamp failure. DELETE INSTANCES (A) & (C)

Abatement Note: Among other methods, one feasible and acceptable method to correct the hazard is to add two to three additional clips to the wire rope rigging as prescribed in the manufacturer's specifications, or, in the alternative as described in standard wire rope rigging tables.

Abatement Note: Abatement certification and documentation are required for this item (See enclosed "Sample Abatement-Certification Letter").

Date By Which Violation Must be Abated:
Proposed Penalty:

12/15/04 m2
11/15/2004
10/12/2004 (AK)
\$ 4500.00
\$ 3,375.00

See pages 1 through 5 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.



Citation and Notification of Penalty

Company Name: Union Drilling Inc.
Inspection Site: Figure Four #8016B, Rifle, CO 81650

Citation 1 Item 1 Type of Violation: **Serious**

Section 5(a)(1) of the Occupational Safety and Health Act of 1970: The employer did not furnish to each of his employees employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees in that employees were exposed to amputation and/or crushing hazards:

(a) Union Drilling, at drill site Figure Four #8016B, Rifle, CO: On or before June 1, 2004, the employer did not ensure that the a "chain-around" system bypassed the come-a-longs that were used to tension the four wind-guys. Whereas the come-a-longs are conventionally used to tension windguys, they are not intended to transmit the load from the wind guy wire ropes to the anchors. Absence of a "chain-around" bypass exposed two or more employees to undue derrick swaying in the event of windguy failure and consequent struck-by hazards.

Abatement Note: Among other methods, one feasible and acceptable method to correct the hazard is to observe the come-a-long manufacturer's specifications that prescribe "chaining-around" the come-a-long tensioning system in the wind-guy-anchor assembly.

Abatement Note: Abatement certification is required for this item.

Date By Which Violation Must be Abated:
Proposed Penalty:

12/15/04 MR
11/15/2004
10/12/2004
\$ 4500.00
\$ 3,375.00

See pages 1 through 1 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.



Citation and Notification of Penalty

Company Name: Union Drilling Inc.
Inspection Site: Figure Four #8016B, Rifle, CO 81650

Citation 1 Item 1 Type of Violation: Serious

Section 5(a)(1) of the Occupational Safety and Health Act of 1970: The employer did not furnish to each of his employees employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees in that employees were exposed to amputation and crushing hazards:

(a) Union Drilling Inc., at Figure Four Ranch # 8016B drill site, Rifle, CO: On or before June 1, 2004, the employer did not ensure that the load on the derrick stayed within the manufacturer's guidelines thereby exposing three or more employees to amputation and crushing hazards.

Abatement Note: Among other methods, one feasible and acceptable method to correct the hazard is to avoid loading the rig near its capacity. Doing so would ensure that unexpected load spikes do not exceed the rated capacity of the rig.

Abatement Note: Abatement certification and documentation are required for this item (See enclosed "Sample Abatement-Certification Letter").

Date By Which Violation Must be Abated:
Proposed Penalty:

12/15/04 m2
~~11/15/2004~~
~~10/12/2004~~ (initials)
\$ 6300.00
\$ 4,725.00

See pages 1 through 4 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.



Citation and Notification of Penalty

Company Name: Union Drilling Inc.
Inspection Site: Figure Four #8016B, Rifle, CO 81650

The alleged violations below have been grouped because they involve similar or related hazards that may increase the potential for injury resulting from an accident.

Citation 1 Item 4a Type of Violation: Serious

29 CFR 1910.23(a)(8): Every floor opening into which persons can accidentally walk was not guarded by either a standard railing or a floor hole cover::

(a) Union Drilling Inc., at Figure Four Ranch #8016B drill site, Rifle, CO: On or before May 30, 2004, the employer, acting in an exposing and creating capacity, did not ensure that the guardrail was affixed at the inner pits on the platform above the de-silter room, thereby exposing one or more employees to falls of 10' or more.

Abatement Note: Abatement certification and documentation are required for this item (See enclosed "Sample Abatement-Certification Letter").

Date By Which Violation Must be Abated:
Proposed Penalty:

12/15/04. mrm
~~11/15/2004~~
~~10/12/2004~~ (NAC)
\$ -4500.00
\$ 3,375.00

See pages 1 through 5 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.

U.S. Department of Labor
Occupational Safety and Health Administration

Inspection Number: 307522335
Inspection Dates: 06/01/2004 - 09/28/2004
Issuance Date: 09/29/2004



Citation and Notification of Penalty

Company Name: Union Drilling Inc.
Inspection Site: Figure Four #8016B, Rifle, CO 81650

Citation 1 Item (b) Type of Violation: Serious

29 CFR 1910.23(e)(1): Open sided floor(s) or platform(s) 4 feet or more above the adjacent floor or ground level were not guarded by standard railings (or the equivalent as specified in 29 CFR 1910.23(e)(3)(i) through (v)), on all open sides:

DELETE INSTANCE (A)

(a) ~~Union Drilling Inc., at Figure Four Ranch #8016B drill site, Rifle, CO: On or before May 30, 2004, the employer, acting in a creating and exposing capacity, did not ensure that a guardrail was affixed at the SW corner of the drilling floor, thereby exposing three or more employees to falls of 12' or more.~~

(b) Union Drilling Inc., at Figure Four Ranch #8016B drill site, Rifle, CO: On or before May 30, 2004, the employer, acting in a creating and exposing capacity, did not ensure that a guardrail was affixed at the SE edge of the mudpit, thereby exposing three or more employees to falls of 10' or more.

(c) Union Drilling Inc., at Figure Four Ranch #8016B drill site, Rifle, CO: On or before May 30, 2004, the employer, acting in a creating and exposing capacity, did not ensure that a guardrail was affixed at the NE corner of the mudpit floor, thereby exposing three or more employees to falls of 10' or more.

Abatement Note: Abatement certification and documentation are required for this item (See enclosed "Sample Abatement-Certification Letter").

12/15/04 MZ

11/15/2004
10/12/2004 (signature)

Date By Which Violation Must be Abated:

See pages 1 through 3 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.

U.S. Department of Labor
Occupational Safety and Health Administration

Inspection Number: 307522235
Inspection Dates: 06/01/2004 - 09/28/2004
Issuance Date: 09/29/2004



Citation and Notification of Penalty

Company Name: Union Drilling Inc.
Inspection Site: Figure Four #8016B, Rifle, CO 81650

Citation 1 Item | Type of Violation: Serious

29 CFR 1910.132(j); 1 29 CFR 1910.132(a): Protective equipment was not used when necessary whenever hazards capable of causing injury and impairment were encountered:

(a) Union Drilling Inc., at Figure Four #8016B drill site, Rifle, CO: On or before May 31, 2004, the employer did not ensure that the lanyard that attached derrick workers to the derrick at the monkeyboard, met the engineering specifications for a personal fall arrest system, thereby exposing two or more employees to the hazard of shock loading in the event of a fall for the full wire rope length of three feet.

Abatement Note: Abatement certification and documentation are required for this item (See enclosed "Sample Abatement-Certification Letter").

Date By Which Violation Must be Abated:
Proposed Penalty:

10/12/2004
\$ ~~4500.00~~
\$ 3,375.00

(Handwritten initials/signature)

(Handwritten signature)
HERB GIBSON
Area Director

See pages 1 through 3 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.

U.S. DEPARTMENT OF LABOR
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
 DENVER AREA OFFICE
 1391 SPEER BLVD., SUITE 210
 DENVER, CO 80204
 Phone: (303)844-5285 FAX: 303-844-6676



**INVOICE/
 DEBT COLLECTION NOTICE**

Company Name: Union Drilling Inc.
Inspection Site: Figure Four #8016B, Rifle, CO 81650
Issuance Date: 09/29/2004

Summary of Penalties for Inspection Number 307522235

Citation 1, Serious

= \$ ~~24300.00~~

\$18,225.00
\$18,225.00

TOTAL PROPOSED PENALTIES

= \$ ~~24300.00~~

To avoid additional charges, please remit payment promptly to this Area Office for the total amount of the uncontested penalties summarized above. Make your check or money order payable to:

"DOL-OSHA". Please indicate OSHA's Inspection Number (indicated above) on the remittance.

OSHA does not agree to any restrictions or conditions or endorsements put on any check or money order for less than full amount due, and will cash the check or money order as if these restrictions, conditions, or endorsements do not exist.

Pursuant to the Debt Collection Act of 1982 (Public Law 97-365) and regulations of the U.S. Department of Labor (29 CFR Part 20), the Occupational Safety and Health Administration is required to assess interest, delinquent charges, and administrative costs for the collection of delinquent penalty debts for violations of the Occupational Safety and Health Act.

Interest. Interest charges will be assessed at an annual rate determined by the Secretary of the Treasury on all penalty debt amounts not paid within one month (30 calendar days) of the date on which the debt amount becomes due and payable (penalty due date). The current interest rate is 2%. Interest will accrue from the date on which the penalty amounts (as proposed or adjusted) become a final order of the Occupational Safety and Health Review Commission (that is, 10 working days from your receipt of the Citation and Notification of Penalty), unless you file a notice of contest. Interest charges will be waived if the full amount owed is paid within 30 calendar days of the final order.

Delinquent Charges. A debt is considered delinquent if it has not been paid within one month (30 calendar days) of the penalty due date or if a satisfactory payment arrangement has not been made. If the debt remains delinquent for more than 90 calendar days, a delinquent charge of six percent (6%) per annum will be assessed accruing from the date that the debt became delinquent.

Administrative Costs Agencies of the Department of Labor are required to assess additional charges for the recovery of delinquent debts. These additional charges are administrative costs incurred by the Agency in its attempt to collect an unpaid debt. Administrative costs will be assessed for demand letters sent in an attempt to collect the unpaid debt.


HERB GIBSON
Area Director

9/30/04
Date